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December 11, 2019

VIA ECF

The Honorable Lorna G. Schofield
United States District Judge
Thurgood Marshall U.S. Courthouse
40 Foley Square
New York, New York 10007

The Honorable Stewart D. Aaron
United States Magistrate Judge
Daniel Patrick Moynihan U.S. Courthouse
500 Pearl Street
New York, New York 10007

Re: *Contant, et al. v. Bank of Am. Corp., et al.*, 1:17-cv-03139

Dear Judge Schofield and Magistrate Judge Aaron:

Pursuant to the Court's Order at ECF 354, enclosed please find a copy of the subpoena for production of documents served by Defendant HSBC North America Holdings, Inc. on Forex Capital Markets, LLC.

Respectfully submitted,

LOCKE LORD LLP

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*Attorneys for Defendant
HSBC North America Holdings, Inc.*

CC: Counsel for all parties via ECF
Counsel for FXCM via email

UNITED STATES DISTRICT COURT
for the
Southern District of New York

JAMES CONTANT, et al.,

Plaintiff

v.

Bank of America Corp., et al.,

Defendant

Civil Action No. 17 Civ. 03139 (LGS)

**SUBPOENA TO PRODUCE DOCUMENTS, INFORMATION, OR OBJECTS
OR TO PERMIT INSPECTION OF PREMISES IN A CIVIL ACTION**

To: Forex Capital Markets, LLC c/o Barry Temkin, Mound Cotton Wollan & Greengrass LLP
One New York Plaza, 44th Fl. New York, NY 10004

(Name of person to whom this subpoena is directed)

Production: YOU ARE COMMANDED to produce at the time, date, and place set forth below the following documents, electronically stored information, or objects, and to permit inspection, copying, testing, or sampling of the material: See Attachment A

Place: Locke Lord LLP c/o Greg Casamento Brookfield Place, 200 Vesey St., 20th Fl. New York, NY 10281	Date and Time: 05/23/2019 5:00 pm
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Inspection of Premises: YOU ARE COMMANDED to permit entry onto the designated premises, land, or other property possessed or controlled by you at the time, date, and location set forth below, so that the requesting party may inspect, measure, survey, photograph, test, or sample the property or any designated object or operation on it.

Place:	Date and Time:
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The following provisions of Fed. R. Civ. P. 45 are attached – Rule 45(c), relating to the place of compliance; Rule 45(d), relating to your protection as a person subject to a subpoena; and Rule 45(e) and (g), relating to your duty to respond to this subpoena and the potential consequences of not doing so.

Date: 04/08/2019

CLERK OF COURT

OR

Signature of Clerk or Deputy Clerk



Attorney's signature

The name, address, e-mail address, and telephone number of the attorney representing (name of party) HSBC North Am.
Holdings, Inc. , who issues or requests this subpoena, are:
J. Matthew Goodin
Locke Lord LLP, 111 South Wacker Dr. Chicago, IL 60606, jmgoodin@lockelord.com, (312) 443-0472

Notice to the person who issues or requests this subpoena

If this subpoena commands the production of documents, electronically stored information, or tangible things or the inspection of premises before trial, a notice and a copy of the subpoena must be served on each party in this case before it is served on the person to whom it is directed. Fed. R. Civ. P. 45(a)(4).

Federal Rule of Civil Procedure 45 (c), (d), (e), and (g) (Effective 12/1/13)**(c) Place of Compliance.**

(1) **For a Trial, Hearing, or Deposition.** A subpoena may command a person to attend a trial, hearing, or deposition only as follows:

- (A) within 100 miles of where the person resides, is employed, or regularly transacts business in person; or
- (B) within the state where the person resides, is employed, or regularly transacts business in person, if the person
 - (i) is a party or a party's officer; or
 - (ii) is commanded to attend a trial and would not incur substantial expense.

(2) **For Other Discovery.** A subpoena may command:

- (A) production of documents, electronically stored information, or tangible things at a place within 100 miles of where the person resides, is employed, or regularly transacts business in person; and
- (B) inspection of premises at the premises to be inspected.

(d) Protecting a Person Subject to a Subpoena; Enforcement.

(1) **Avoiding Undue Burden or Expense; Sanctions.** A party or attorney responsible for issuing and serving a subpoena must take reasonable steps to avoid imposing undue burden or expense on a person subject to the subpoena. The court for the district where compliance is required must enforce this duty and impose an appropriate sanction—which may include lost earnings and reasonable attorney's fees—on a party or attorney who fails to comply.

(2) Command to Produce Materials or Permit Inspection.

(A) **Appearance Not Required.** A person commanded to produce documents, electronically stored information, or tangible things, or to permit the inspection of premises, need not appear in person at the place of production or inspection unless also commanded to appear for a deposition, hearing, or trial.

(B) **Objections.** A person commanded to produce documents or tangible things or to permit inspection may serve on the party or attorney designated in the subpoena a written objection to inspecting, copying, testing, or sampling any or all of the materials or to inspecting the premises—or to producing electronically stored information in the form or forms requested. The objection must be served before the earlier of the time specified for compliance or 14 days after the subpoena is served. If an objection is made, the following rules apply:

(i) At any time, on notice to the commanded person, the serving party may move the court for the district where compliance is required for an order compelling production or inspection.

(ii) These acts may be required only as directed in the order, and the order must protect a person who is neither a party nor a party's officer from significant expense resulting from compliance.

(3) Quashing or Modifying a Subpoena.

(A) **When Required.** On timely motion, the court for the district where compliance is required must quash or modify a subpoena that:

- (i) fails to allow a reasonable time to comply;
- (ii) requires a person to comply beyond the geographical limits specified in Rule 45(c);
- (iii) requires disclosure of privileged or other protected matter, if no exception or waiver applies; or
- (iv) subjects a person to undue burden.

(B) **When Permitted.** To protect a person subject to or affected by a subpoena, the court for the district where compliance is required may, on motion, quash or modify the subpoena if it requires:

- (i) disclosing a trade secret or other confidential research, development, or commercial information; or

(ii) disclosing an unretained expert's opinion or information that does not describe specific occurrences in dispute and results from the expert's study that was not requested by a party.

(C) **Specifying Conditions as an Alternative.** In the circumstances described in Rule 45(d)(3)(B), the court may, instead of quashing or modifying a subpoena, order appearance or production under specified conditions if the serving party:

- (i) shows a substantial need for the testimony or material that cannot be otherwise met without undue hardship; and
- (ii) ensures that the subpoenaed person will be reasonably compensated.

(e) Duties in Responding to a Subpoena.

(1) **Producing Documents or Electronically Stored Information.** These procedures apply to producing documents or electronically stored information:

(A) **Documents.** A person responding to a subpoena to produce documents must produce them as they are kept in the ordinary course of business or must organize and label them to correspond to the categories in the demand.

(B) **Form for Producing Electronically Stored Information Not Specified.** If a subpoena does not specify a form for producing electronically stored information, the person responding must produce it in a form or forms in which it is ordinarily maintained or in a reasonably usable form or forms.

(C) **Electronically Stored Information Produced in Only One Form.** The person responding need not produce the same electronically stored information in more than one form.

(D) **Inaccessible Electronically Stored Information.** The person responding need not provide discovery of electronically stored information from sources that the person identifies as not reasonably accessible because of undue burden or cost. On motion to compel discovery or for a protective order, the person responding must show that the information is not reasonably accessible because of undue burden or cost. If that showing is made, the court may nonetheless order discovery from such sources if the requesting party shows good cause, considering the limitations of Rule 26(b)(2)(C). The court may specify conditions for the discovery.

(2) Claiming Privilege or Protection.

(A) **Information Withheld.** A person withholding subpoenaed information under a claim that it is privileged or subject to protection as trial-preparation material must:

- (i) expressly make the claim; and
- (ii) describe the nature of the withheld documents, communications, or tangible things in a manner that, without revealing information itself privileged or protected, will enable the parties to assess the claim.

(B) **Information Produced.** If information produced in response to a subpoena is subject to a claim of privilege or of protection as trial-preparation material, the person making the claim may notify any party that received the information of the claim and the basis for it. After being notified, a party must promptly return, sequester, or destroy the specified information and any copies it has; must not use or disclose the information until the claim is resolved; must take reasonable steps to retrieve the information if the party disclosed it before being notified; and may promptly present the information under seal to the court for the district where compliance is required for a determination of the claim. The person who produced the information must preserve the information until the claim is resolved.

(g) Contempt.

The court for the district where compliance is required—and also, after a motion is transferred, the issuing court—may hold in contempt a person who, having been served, fails without adequate excuse to obey the subpoena or an order related to it.

Attachment A

DEFINITIONS

The following Definitions apply throughout these Requests without regard to capitalization. In addition, the Definitions and rules of construction set forth in Rule 34 of the Federal Rules of Civil Procedure and Rule 26.3 of the Local Civil Rules of the United States District Courts for the Southern and Eastern Districts of New York (“Local Rules”) are incorporated by reference and apply throughout this Attachment A as if fully set out herein, except to the extent that the local rules of the forum in which the subpoena is issued provide otherwise.

1. The term “Action” refers to the action pending in the United States District Court for the Southern District of New York, captioned *Contant, et al. v. Bank of America Corporation, et al.*, No. 17 Civ. 3139 (LGS), and all cases consolidated with it. The publicly-filed version of the operative complaint, the Second Consolidated Class Action Complaint, dated November 28, 2018, Dkt. 183 (“Complaint”), is attached as Appendix A.

2. The term “Associated Person” refers to an individual who solicits orders, customers, or customer funds (or who supervises persons so engaged) on behalf of a CFTC registrant.

3. The term “CFTC” refers to the United States Commodity Futures Trading Commission.

4. The term “Counterparty” refers to any person or entity that you transacted FX Instruments with, including completed Transactions and Orders that You placed with or received from, whether such Orders were filled, partially filled, or unfilled.

5. The term “Defendants” refers to Bank of America Corporation; Bank of America, N.A.; Merrill Lynch, Pierce, Fenner & Smith Incorporated; MUFG Bank, Ltd., previously

known as The Bank Of Tokyo Mitsubishi UFJ Ltd.; Barclays Bank plc; Barclays Capital Inc.; BNP Paribas Group; BNP Paribas US Wholesale Holdings Corp., previously known as BNP Paribas North America, Inc.; BNP Paribas Securities Corp., which now includes BNP Paribas Prime Brokerage, Inc.; Citigroup Inc.; Citibank, N.A.; Citicorp; Citigroup Global Markets Inc.; Credit Suisse AG; Credit Suisse Securities (USA) LLC; Deutsche Bank AG; Deutsche Bank Securities Inc.; The Goldman Sachs Group, Inc.; Goldman Sachs & Co. LLC; HSBC Bank Plc; HSBC North America Holdings, Inc.; HSBC Bank USA, N.A.; HSBC Securities (USA) Inc.; JPMorgan Chase & Co.; JPMorgan Chase Bank, N.A.; Morgan Stanley; Morgan Stanley & Co., LLC; Morgan Stanley & Co. International plc; RBC Capital Markets LLC; The Royal Bank of Scotland plc, now known as NatWest Markets Plc; RBS Securities Inc., now known as NatWest Markets Securities Inc.; Société Générale; Standard Chartered Bank; UBS AG; UBS Group AG; and UBS Securities LLC.

6. The term “Document,” “Communication,” “Concerning,” and “Person” have the meanings set forth in Local Civil Rule 26.3.

7. The term “FX” refers to foreign exchange.

8. The terms “FX Instrument” or “FX Instruments” refer to any FX spot, rolling spot, forward, swap, future, option, or any other Transaction or instrument of which the trading or settlement value is related in any way to FX rates.

9. The term “Introducing Broker” refers to an individual or organization that solicits or accepts orders to transact in various products, including FX Instruments, but does not accept money or other assets from customers to support these orders and where such transactions are executed and risk managed by a separate entity such as an RFED.

10. The term “Liquidity Provider” shall include any non-customer counterparty with which You transacted, including institutions that act as market makers in FX Instruments in that the institutions act as both buyers and sellers of FX Instruments, and dealer banks as referenced in paragraph 152 of the Complaint.

11. The term “Named Plaintiffs” refers to James Contant, Sandra Lavender, Victor Hernandez, Martin-Han Tran, FX Primus Ltd., Carlos Gonzalez, Ugnius Matkus, Charles G. Hitchcock III, Jerry Jacobson, Tina Porter, and Paul Vermillion.

12. The term “NFA” refers to the National Futures Association.

13. The term “Order Data” refers to, for any request to execute a trade, contract, assignment, novation, settlement, expiration, exercise, termination, or any other agreement to exchange things of value (an “Order”), regardless of form or structure, including limit order, stop loss order, trailing stop order, market order, fixing order, or other type of Order, the data, information, Documents, or records showing the terms and specifications of such Order, including:

- (a) any identifying number for the Order and any associated or linked Order;
- (b) any identifying number for any resulting, associated or linked Transaction;
- (c) the instrument type (e.g., spot, forward, swap, future, option, etc.);
- (d) the Order type (e.g., limit, stop-loss, market, fixing, etc.);
- (e) terms of the Order, including price, tenor, currency pair, and notional value;
- (f) the date and time the Order was placed;
- (g) the date(s) on which the Order was to expire;

- (h) any instructions related to the Order, including fill instructions (e.g., all-or-nothing);
- (i) the identity of the party and person who placed the Order including any unique identifying numbers that You or any other person assigned, the true name, address, domicile, phone number, and other identifying information;
- (j) the names of any assignee, fund, beneficiary, or beneficial holder or owner for which the Order was entered;
- (k) Order entry timestamps, including all data showing rejected Orders or Order confirmations;
- (l) if the Order was rejected, reason for rejection;
- (m) records of Order modifications, cancellations, or any other Order life-cycle events, including confirmations, modifications, rejections, cancellations, partial fills, total fills, etc.;
- (n) any broker or other intermediary who played any role in the Order;
- (o) the means, method, or mechanism by which the Order was placed (e.g., phone, chat, email, text, Web site, trading platform, etc.), including the branded or trade name for any electronic order book platform; and
- (p) The location of the person that placed the Order at the time the Order was placed.

14. The term “Position(s)” refers to any stake in or economic exposure to an FX Instrument, security, market, or other financial product.

15. The terms “Retail Foreign Exchange Dealers” or “RFEDs” refers to any entity registered (with the CFTC, NFA or other regulator or self-regulatory organization) as a retail foreign exchange dealer or otherwise operating as a retail foreign exchange dealer or an entity that provides trading services in FX Instruments to retail customers.

16. The term “Transaction Data” refers to, for any contract, assignment, novation, settlement, expiration, exercise, termination, or any other agreement to exchange things of value regardless of form or structure (each, a “Transaction”), the data, information, Documents, or records showing the terms and specifications for such Transaction, including:

- (a) any identifying number for the Transaction and any associated or linked Transactions;
- (b) any identifying number for an Order associated with or linked to the Transaction;
- (c) the type (e.g., spot, forward, swap, future, option, etc.) and terms of the Transaction, including price, tenor, currency pair, and notional value;
- (d) the identity of the Counterparty to the Transaction including any unique identifying number that You or any other person assigned, the true name, address, domicile, phone number, and other identifying information;
- (e) the date and time the Transaction was executed, and the effective date of the Transaction;
- (f) the date(s) on which the Transaction was to expire, terminate, or settle, and the date(s) on which the Transaction in fact expired, terminated, or settled;

- (g) the names of any assignee, fund, beneficiary, or beneficial holder or owner for which the Transaction was executed;
- (h) any broker or other intermediary who played any role in the Transaction;
- (i) the identity of any salesperson, trader, risk manager, assistant, broker, investment manager, agent, or representative of each party to the Transaction, who played any role in the Transaction;
- (j) the amount of any fee paid or received (including clearing, execution, and broker fees) on the Transaction;
- (k) the amount of any commission paid or received on the Transaction;
- (l) the direction You held in the Transaction;
- (m) the terms and date of any correction, amendment, novation or cancellation of the terms of the Transaction;
- (n) the date, time and type of Order that led to the Transaction, including limit order, stop loss order, trailing stop order, market order, fixing order, or other type of order;
- (o) the means, method, or mechanism by which You placed any Order that led to the Transaction and/or by which a Transaction was executed (e.g., phone, chat, email, text, Web site, trading platform, etc.), including the brand or trade name for any commercially available electronic trading platform;
- (p) the location of the person who placed the Order at the time the Order was placed and/or the Transaction was executed;

- (q) the location of the desk or trader of the Counterparty that executed the Transaction;
- (r) any mark-to-market valuations of the Transaction;
- (s) the amount and direction of any payments or cash flows associated with, arising out of, or resulting from the Transaction, including any supporting credit Documents/agreements as well as collateral or margin arrangements;
- (t) clearing arrangement(s) for the Transaction;
- (u) bid and ask quotes received by You in connection with each Transaction;
- (v) Your profit or loss and cost of trading for each Transaction; and
- (w) all other data elements or data fields, including all versions of data for each Transaction, You maintain or have access to regarding such Transactions.

17. The terms “You,” and “Your” refer to Forex Capital Markets, LLC and any of its predecessors, successors, divisions, parent, subsidiaries, and affiliates; each person directly or indirectly, wholly or in part, owned or controlled by it; and all present and former principals, directors, officers, employees, agents, attorneys, advisors, or other persons acting or purporting to act on its behalf, including Global Brokerage, Inc., Alpari (US) LLC, FXDIRECTDEALER, LLC, IBFX, Inc., Interbank FX, HotSpot FXr, LLC, Jefferies, LLC, Prudential Bache Commodities, LLC, and ODL Securities, LLC.

18. To bring within the scope of these Requests all information that might otherwise be construed to be outside of their scope, the following rules of construction apply: (i) the word “including” shall be read to mean including without limitation; (ii) the present tense shall be

construed to include the past tense and vice versa; (iii) references to employees, officers, directors, or agents shall include both current and former employees, officers, directors, agents, and representatives; (iv) the terms “and” and “or,” and “all,” “any,” and “each” shall be construed in accordance with Local Civil Rule 26.3; and (v) in accordance with Local Civil Rule 26.3, the use of the singular form of any word includes the plural and vice versa.

INSTRUCTIONS

1. In producing Documents, You are to produce all Documents described below that are in Your possession, custody, or control, including those Documents in the possession, custody, or control of Your employees, agents, investigators, accountants, or other persons acting or purporting to act on your behalf, regardless of location.
2. Electronically stored information should be produced in compliance with the formats, procedures, and protocols set forth in the Stipulation and Order Establishing the Protocol for the Production of Documents and Electronically Stored Information (“ESI”), which is attached as Appendix B.
3. If Documents produced in response to these requests contain confidential information, You may designate the material as “CONFIDENTIAL” or “HIGHLY CONFIDENTIAL” pursuant to the Stipulation and Order of Confidentiality, which is attached as Appendix C.
4. Unless otherwise instructed or clear from the context of the request, these requests seek responsive Documents and Communications authored, generated, disseminated, drafted, produced, reproduced, received, obtained, or otherwise created or distributed, concerning, or in effect during the period from December 1, 2007, to December 31, 2013.

REQUESTS FOR PRODUCTION

1. All Transaction Data for Transactions in FX Instruments You executed either for Your own account or on behalf of Your customer.
2. All Order Data related to Transactions in FX Instruments You executed either for Your own account or on behalf of Your customer.
3. Data definitions for each field produced for all Transaction Data and Order Data.
4. All end-of-day and intra-day reports, and Documents related to such reports, reflecting Your Position in FX Instruments, by currency pair.
5. All end-of-day and intra-day reports, and Documents related to such reports, reflecting each of Your customers' Positions in FX Instruments, by currency pair.
6. Documents related to Your corporate structure (and any changes thereto) during the relevant period, including organization charts sufficient to identify departmental organization and related management and personnel, including any affiliate operating as an RFED.
7. Documents sufficient to identify the time period during which You or any of Your affiliates operated as an RFED or were registered as an RFED with the CFTC or any other regulator, or were a member of the NFA or any other self-regulatory organization or association related to trading in FX Instruments.
8. All Documents prepared or submitted in connection with any and all applications by You to register, or maintain registration, with the CFTC as an RFED or the NFA as a FOREX Dealer member, including any NFA Form 7-R, NFA Form 8-R, NFA Annual Questionnaire, or Documents related to your NFA FOREX Dealer membership.
9. All Documents reflecting any decision by You to withdraw, amend or modify an application to or registration with the CFTC as an RFED or NFA as a FOREX Dealer member.

10. Documents sufficient to identify all of Your employees or Associated Persons with any role or responsibility for Your Transactions in FX Instruments, Your relationships with Liquidity Providers for FX Instruments, and Your relationships with customers for FX Instruments, including such employees' or Associated Persons' titles, supervisors, and dates of employment or association.

11. Documents sufficient to identify whether any of Your customers entered into Transactions in FX Instruments with You through Introducing Brokers and Documents sufficient to show how the involvement of any Introducing Broker in Transactions between You and Your customers impacted bid-ask spreads, pricing, or customer rebates.

12. All Documents governing or related to Your Transactions in FX Instruments with any and all Liquidity Providers, including but not limited to, master agreements, ISDA agreements, electronic trading agreements, credit agreements, prime brokerage agreements, exclusivity agreements, trade confirmations, account statements, revenue-sharing agreements, profit and loss statements, and settlement records.

13. All Documents governing or related to Your Transactions in FX Instruments with any and all of Your customers, including but not limited to account application materials, customer agreements (including amendments, addenda, or modifications), account statements, trade confirmations, credit agreements, electronic trading agreements, terms and conditions of service, account statements, rebate programs, profit and loss statements, and settlement records.

14. Documents sufficient to identify all application program interfaces ("API") used to connect to and transfer data with Your Liquidity Providers and customers, and all order management, trading, and execution software and/or other similar information systems You used to conduct FX Transactions with Liquidity Providers and customers.

15. Documents sufficient to describe and depict the operation of Your trading operations in FX Instruments and any limitations or instructions provided to Your FX traders or Your Associated Persons about when, how and with whom to trade, including but not limited to organizational charts, seating charts, trading policies and procedures, risk management policies, training materials, and standard protocols.

16. Documents regarding the methodology, policies, practices, procedures, and calculations (including computer algorithms, models, and information systems) used by You to set the bid-ask spread, mid-quote average spread, or other pricing quotes published or otherwise provided to Your customers with respect to Transaction in FX Instruments, including but not limited to Documents related to:

- (a) the method by which You developed, aggregated, processed, or published FX Instrument pricing information from Liquidity Providers for Your customers or for any use related to Your Transactions in FX Instruments with Your customers;
- (b) the method by which You monitored, analyzed, and forecasted FX transaction prices, including for the construction of a forward price curve or price estimate;
- (c) Your efforts to gather information, research, market color, or other data about Your customers;
- (d) pricing mark-ups or other pricing premiums You applied to customer transactions and policies, procedures, practices, and discussions regarding such mark-ups; and

(e) Your policies, practices, and procedures for employing any differential pricing by customer.

17. Documents sufficient to show the commissions, fees, or other costs charged by You to Your customers for or relating to Transactions in FX Instruments.

18. All Documents related to Your risk management policies, practices, and procedures that relate or apply to Your Transactions in FX Instruments, including but not limited to Documents or data reflecting Your internalization, aggregation, hedging, or matching off of Your customers' Orders or Transactions in FX Instruments.

19. Documents or data sufficient to show which, if any Transactions in FX Instruments between You and any of Your customers had a matching, corresponding or concurrent trade between You and any of Your Liquidity Providers, as alleged in Paragraphs 159, 161, and 162 in the Complaint (attached as Appendix A), and Documents or data sufficient to show the terms of such Transactions.

20. All Documents and data related to any regulatory, law enforcement, or civil investigation of or action (including prosecutions, lawsuits and arbitrations) against You or Your Associated Persons regarding sales practices, promotional materials, or trading to the extent related to trading in FX Instruments or Your operation as an RFED, including but not limited to Documents and data produced or received by You in such matters. This request includes Documents and data related to the pending lawsuit against you styled *In re Global Brokerage Inc. f/k/a FXCM Inc. Securities Litigation*, Case No. 1:17-cv-00916, in the United States District Court for the Southern District of New York.

21. All promotional or informational materials or other disclosures relating in any way, directly or indirectly, to trading in FX Instruments that You or Your Associated Persons

published or otherwise communicated or sent to Your customers or potential customers during the relevant period, including but not limited to any Documents showing the price, bid-ask spread, or mid-quote average spread of an FX Instrument, the manner in which such pricing was calculated, or the manner in which trading platforms provided by You to customers functioned.

22. Documents sufficient to identify the FX Instruments You offered to your customers during the relevant period and their specifications, including but not limited to settlement procedures.

23. Documents sufficient to show the types of Orders that Your customers were able to place with You for FX Instruments (e.g., fix, stop-loss, limit, etc.).

24. Documents sufficient to show how You manage Your customers' open risk positions with respect to each customer's credit limits, including but not limited to Documents reflecting or explaining how you monitor Your customers' open risk positions and manage or liquidate such risk, including procedures for monitoring and liquidating margin accounts.

25. All communications between You and Named Plaintiffs or Plaintiffs' Counsel in this Action and any Documents or data You provided to or received from Named Plaintiffs or Plaintiffs' Counsel in this Action, including all such communications or Documents exchanged through the conclusion of this Action.

26. Documents sufficient to show the timing, terms, and method by which You acquired, merged, or were otherwise transferred RFED operations or FX customer accounts from or with any other entity, including IBFX, Inc., as well as any due diligence materials provided and received by You in that transaction related to Your RFED operations.

APPENDIX A

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

JAMES CONTANT, SANDRA LAVENDER,
VICTOR HERNANDEZ, MARTIN-HAN
TRAN, FX PRIMUS LTD., CARLOS
GONZALEZ, UGNIUS MATKUS, CHARLES
G. HITCHCOCK III, JERRY JACOBSON,
TINA PORTER, AND PAUL VERMILLION,
on behalf of themselves and all others similarly
situated,

Plaintiffs,

v.

BANK OF AMERICA CORPORATION;
BANK OF AMERICA, N.A.; MERRILL
LYNCH, PIERCE, FENNER & SMITH INC.;
THE BANK OF TOKYO MITSUBISHI UFJ
LTD.; BARCLAYS BANK PLC; BARCLAYS
CAPITAL INC.; BNP PARIBAS GROUP; BNP
PARIBAS NORTH AMERICA, INC.; BNP
PARIBAS SECURITIES CORP.; BNP
PARIBAS PRIME BROKERAGE, INC.;
CITIGROUP INC.; CITIBANK, N.A.;
CITICORP; CITIGROUP GLOBAL
MARKETS INC.; CREDIT SUISSE GROUP
AG; CREDIT SUISSE AG; CREDIT SUISSE
SECURITIES (USA) LLC; DEUTSCHE BANK
AG; DEUTSCHE BANK SECURITIES INC.;
THE GOLDMAN SACHS GROUP, INC.;
GOLDMAN, SACHS & CO.; HSBC BANK
PLC; HSBC NORTH AMERICA HOLDINGS,
INC.; HSBC BANK USA, N.A.; HSBC
SECURITIES (USA) INC.; JPMORGAN
CHASE & CO.; JPMORGAN CHASE BANK,
N.A.; MORGAN STANLEY; MORGAN
STANLEY & CO., LLC; MORGAN STANLEY
& CO. INTERNATIONAL PLC; RBC
CAPITAL MARKETS LLC; THE ROYAL
BANK OF SCOTLAND PLC; RBS
SECURITIES INC.; SOCIÉTÉ GÉNÉRALE
S.A.; STANDARD CHARTERED BANK; UBS
AG; UBS GROUP AG; and UBS SECURITIES
LLC;

Defendants.

Civil Action No. 17-cv-3139-LGS

SECOND CONSOLIDATED CLASS
ACTION COMPLAINT

JURY TRIAL DEMANDED

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Plaintiffs James Contant, Sandra Lavender, Victor Hernandez, Martin-Han Tran, FX Primus Ltd., Carlos Gonzalez, Ugnius Matkus, Charles G. Hitchcock III, Jerry Jacobson, Tina Porter, and Paul Vermillion (collectively, “Plaintiffs”), on behalf of themselves and the proposed Classes (defined below), make these allegations against Defendants based upon personal knowledge as to matters relating to themselves, and upon information and belief, documents produced in related litigation and government investigations, and the investigations of counsel, including analysis by Plaintiffs’ experts, as to all other matters.

NATURE OF THE ACTION

1. This case involves a conspiracy among horizontal competitors to fix the prices of foreign currencies (“FX”) and foreign currency instruments. Plaintiffs bring this action to recover for injuries caused by Defendants on behalf of the proposed State Classes.¹ Plaintiffs and members of the proposed Classes are indirect purchasers of spot FX Instruments² from Defendants and/or Defendants’ co-conspirators.

2. Beginning at least as early as 2007 and continuing through at least 2013, Defendants conspired with each other to fix prices in the FX market.³ Defendants communicated with each other daily, exchanging confidential customer information and coordinating their trading strategies to manipulate FX benchmark rates and fix FX prices. These collusive communications were widespread throughout Defendants’ FX trading departments. As one FX trader at Barclays put it, “if you aint cheating, you aint trying.”

¹ See Class definitions, *infra* at “Class Action Allegations.”

² “FX Instrument” is defined in this Complaint and in the *FOREX* settlements as any FX spot transaction, forward, swap, future, option, or any other FX transaction or instrument the trading or settlement value of which is related in any way to FX rates. “FX Exchange-Traded Instrument” is defined in this Complaint and in the *FOREX* settlements as any FX Instrument that was listed for trading through a U.S. exchange, including, but not limited to, FX futures contracts and options contracts.

³ The exact dates of the Conspiracy and the identities of Defendants’ co-conspirators are presently unknown to Plaintiffs.

3. Defendants' conspiracy impacted the prices of all forms of FX Instruments throughout the Class Period, including, as detailed below, the prices of FX Instruments purchased by Plaintiffs and members of the Classes from retail foreign exchange dealers ("RFEDs") where the RFEDs purchased FX Instruments from Defendants for resale to their retail FX customers such as Plaintiffs and members of the Classes.

4. Defendants' conspiracy has been the subject of antitrust investigations by multiple U.S., foreign, and international governmental authorities. Several government authorities have imposed fines and other sanctions on one or more Defendants, including the U.S. Department of Justice, U.S. Commodity Futures Trading Commission, U.S. Federal Reserve, New York State Department of Financial Services, United Kingdom Financial Conduct Authority, the Swiss Financial Market Supervisory Authority, and the South African Competition Commission. Thus far, Defendants have been ordered to pay over \$11 billion in fines and settlements to government authorities for their involvement in the FX market manipulation conspiracy.

5. Defendants' conspiracy is also the subject of a nationwide direct purchaser antitrust class action currently pending before this Court, brought on behalf of persons and entities that purchased FX Instruments directly from one or more Defendants or co-conspirators, and persons and entities that purchased FX Exchange-Traded Instruments directly on a U.S. exchange (collectively, the "Direct Purchaser Class Plaintiffs"). *In re Foreign Exchange Benchmark Rates Antitrust Litigation*, 1:13-cv-07789-LGS (S.D.N.Y.) ("FOREX"). On October 22, 2015, the Direct Purchaser Class Plaintiffs in FOREX moved for preliminary approval of settlements totaling \$2,009,075,000 with the following Defendants: Bank of America Corporation; Bank of America, N.A.; Merrill Lynch, Pierce, Fenner & Smith Inc.; Barclays Bank PLC; Barclays Capital Inc.; BNP Paribas Group; BNP Paribas North America Inc.; BNP Paribas

Securities Corp.; BNP Prime Brokerage, Inc.; Citigroup Inc.; Citibank, N.A.; Citicorp; Citigroup Global Markets Inc.; The Goldman Sachs Group, Inc.; Goldman, Sachs & Co.; HSBC Holdings PLC; HSBC Bank PLC; HSBC North America Holdings Inc.; HSBC Bank USA, N.A.; HSBC Securities (USA) Inc.; JPMorgan Chase & Co.; JPMorgan Chase Bank, N.A.; The Royal Bank of Scotland Group PLC; The Royal Bank of Scotland PLC; RBS Securities Inc.; UBS AG; UBS Group AG; and UBS Securities LLC. *See FOREX*, ECF No. 480. On December 15, 2015, this Court preliminarily approved the settlements, designated a settlement administrator, and preliminarily certified a settlement class of persons and entities that entered into an FX Instrument directly with a Defendant or co-conspirator (the “Direct Settlement Class”) and a settlement class of persons and entities that entered into an FX Exchange-Traded Instrument directly on a U.S. exchange (the “Exchange-Only Settlement Class”). *Id.* at ECF No. 536. On July 28, 2017, the *FOREX* plaintiffs moved for preliminary approval of settlements totaling \$111,200,000 with Morgan Stanley, RBC, SocGen, Standard Chartered, and BTMU. *Id.* at ECF No. 820. The Court granted preliminary approval on September 8, 2017. *Id.* at ECF No. 875. On September 29, 2017, the *FOREX* plaintiffs moved for preliminary approval of a settlement for \$190,000,000 with Deutsche Bank. *Id.* at ECF No. 875. The Court granted preliminary approval that same day. *Id.* at ECF No. 882. The fifteen Defendant groups that have entered into settlements in *FOREX* are referred to herein as “Settling Defendants.” On January 12, 2018, the *FOREX* Direct Purchaser Class Plaintiffs filed a motion for final approval of the settlements with all fifteen Settling Defendant groups. *Id.* at ECF No. 924. The Court granted final approval on August 6, 2018. *Id.* at ECF No. 1110. The *FOREX* litigation is ongoing against Credit Suisse Group AG; Credit Suisse AG; and Credit Suisse Securities (USA) LLC (collectively, the “Non-Settling Defendants”). The Defendants named in *FOREX* (including Settling Defendants and

Non-Settling Defendants) are identical to the Defendants named in this action, with the exceptions of HSBC Holdings PLC and The Royal Bank of Scotland Group PLC, which are Settling Defendants in *FOREX* but are no longer Defendants in this action.

6. Plaintiffs and members of the proposed Classes in this action purchased FX Instruments directly from members of the preliminarily-certified Direct Settlement Class in *FOREX*, including those Direct Settlement Class members who are RFEDs. To the extent Plaintiffs' claims must proceed under the rule of reason or otherwise require the definition of a relevant market, the market relevant to Plaintiffs' claims is the United States market for spot FX Instruments. As indirect purchasers of spot FX Instruments, Plaintiffs and members of the proposed Classes are participants in the relevant market.

JURISDICTION, VENUE, AND INTERSTATE COMMERCE

7. This Court has subject matter jurisdiction under 28 U.S.C. § 1332(d), in that this is a class action in which the aggregate amount in controversy exceeds the sum of \$5,000,000, exclusive of interest and costs, and in which some members of the proposed Classes are citizens of a state different from some Defendants.

8. The Court has personal jurisdiction over each Defendant because Defendants' collusive and manipulative acts took place, in substantial part, in New York specifically and in the United States generally. These acts were conducted by persons and entities subject to the laws of the United States, as well as New York, Arizona, California, Illinois, Florida, Massachusetts, Minnesota, North Carolina, and other states. Each Defendant has continuously and systematically transacted FX in this District and throughout the United States. Most Defendants are headquartered in, maintain their principal place of business in, or maintain offices in New York. Defendant traders located outside of the United States communicated directly with Defendant traders located in New York to carry out and facilitate the conspiracy.

Defendants' conspiracy was directed at, and had the intended effect of, causing injury to persons residing in, located in, or doing business in this District and throughout the United States. Defendants' conduct was within the flow of, and had a substantial effect on, the interstate commerce of the United States, including in this District.

9. Venue is proper in this District pursuant to 28 U.S.C. § 1391(b) and 15 U.S.C. § 22. All Defendants reside, transact business, are found, or have agents in this District. Additionally, a substantial part of the events giving rise to Plaintiffs' claims occurred in this District, and a substantial portion of the affected interstate trade and commerce described herein has been carried out in this District.

PARTIES

I. Plaintiffs

10. Plaintiff James Contant is an individual and a resident of Monroe County, New York. During the Class Period defined below, Plaintiff James Contant transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in New York, Plaintiff James Contant engaged in FX spot transactions with currency pairs including EUR/USD, USD/JPY, EUR/JPY, AUD/USD, and USD/CHF directly with an RFED where the RFED transacted those FX Instruments directly with Defendants including Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Morgan Stanley, RBS, RBC, SocGen, and UBS. As a result of Defendants' illegal conduct described herein, the RFED paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to its customers, including Plaintiff James Contant. Thus, Plaintiff James Contant indirectly purchased FX Instruments from one or more Defendants during the Class Period in

New York, and was injured as a result of Defendants' anticompetitive conduct alleged herein.

Plaintiff James Contant is referred to herein as the "New York Plaintiff."

11. Plaintiff Sandra Lavender is an individual and resident of Maricopa County, Arizona. During the Class Period defined below, Plaintiff Sandra Lavender transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in Arizona, Plaintiff Sandra Lavender engaged in FX spot transactions with the currency pair EUR/USD directly with an RFED where the RFED transacted those FX Instruments directly with Defendants including JPMorgan, Morgan Stanley, and RBS. As a result of Defendants' illegal conduct described herein, those RFEDs paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to their customers, including Plaintiff Sandra Lavender. Thus, Plaintiff Sandra Lavender indirectly purchased FX Instruments from one or more Defendants during the Class Period in Arizona, and was injured as a result of Defendants' anticompetitive conduct alleged herein. Plaintiff Sandra Lavender is referred to herein as the "Arizona Plaintiff."

12. Plaintiff Victor Hernandez is an individual and resident of Los Angeles County, California. During the Class Period defined below, Plaintiff Victor Hernandez transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in California, Plaintiff Victor Hernandez engaged in FX spot transactions with currency pairs including GBP/JPY, GBP/USD, and USD/JPY directly from an RFED where the RFED purchased those FX Instruments directly from Defendants including JPMorgan, Morgan Stanley, and RBS. As a result of Defendants' illegal conduct described herein, the RFED paid artificially inflated prices

for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to its customers, including Plaintiff Victor Hernandez. Thus, Plaintiff Victor Hernandez indirectly purchased FX Instruments from one or more Defendants during the Class Period in California, and was injured as a result of Defendants' anticompetitive conduct alleged herein.

13. Plaintiff Martin-Han Tran is an individual and resident of Orange County, California. During the Class Period defined below, Plaintiff Martin-Han Tran transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in California, Plaintiff Martin-Han Tran engaged in FX spot transactions with currency pairs including USD/JPY, AUD/USD, USD/CAD, USD/CHF, GBP/USD, EUR/JPY, EUR/USD, EUR/GBP, GBP/JPY, EUR/CHF, and GBP/AUD directly with an RFED where the RFED transacted those FX Instruments directly with Defendants including Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Morgan Stanley, RBS, RBC, SocGen, and UBS. As a result of Defendants' illegal conduct described herein, the RFED paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to its customers, including Plaintiff Martin-Han Tran. Thus, Plaintiff Martin-Han Tran indirectly purchased FX Instruments from one or more Defendants during the Class Period in California, and was injured as a result of Defendants' anticompetitive conduct alleged herein. Plaintiffs Victor Hernandez and Martin-Han Tran are collectively referred to herein as the "California Plaintiffs."

14. Plaintiff FX Primus Ltd. ("FX Primus") is a limited liability company doing business in the state of Florida. During the Class Period defined below, Plaintiff FX Primus

transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in Florida, Plaintiff FX Primus engaged in FX spot transactions with currency pairs including USD/JPY, EUR/USD, EUR/JPY, and USD/CHF directly from an RFED where the RFED purchased those FX Instruments directly from Defendants including Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Morgan Stanley, RBS, RBC, SocGen, and UBS. As a result of Defendants' illegal conduct described herein, the RFED paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to its customers, including Plaintiff FX Primus. Thus, Plaintiff FX Primus indirectly purchased FX Instruments from one or more Defendants during the Class Period in Florida, and was injured as a result of Defendants' anticompetitive conduct alleged herein.

15. Plaintiff Carlos Gonzalez is an individual and resident of Broward County, Florida. During the Class Period defined below, Plaintiff Carlos Gonzalez transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in Florida, Plaintiff Carlos Gonzalez engaged in FX spot transactions with currency pairs including EUR/USD, GBP/USD, USD/CHF, EUR/CHF, USD/JPY, AUD/JPY, CHF/JPY, NZD/USD, and EUR/GBP directly from an RFED where the RFED purchased those FX Instruments directly from Defendants including Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Morgan Stanley, RBS, RBC, SocGen, and UBS. Specifically, Plaintiff Carlos Gonzalez engaged in FX spot transactions with currency pairs including AUD/CAD, EUR/USD, GBP/USD, USD/JPY, AUD/USD, EUR/USD, AUD/CHF, EUR/JPY,

NZD/USD, NZD/JPY, EUR/AUD, AUD/NZD, and GBP/JPY directly with an RFED where the RFED transacted those FX Instruments directly with Defendants including Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Morgan Stanley, RBS, RBC, SocGen, and UBS. As a result of Defendants' illegal conduct described herein, the RFED paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to its customers, including Plaintiff Carlos Gonzalez. Thus, Plaintiff Carlos Gonzalez indirectly purchased FX Instruments from one or more Defendants during the Class Period in Florida, and was injured as a result of Defendants' anticompetitive conduct alleged herein. Plaintiffs FX Primus and Carlos Gonzalez are collectively referred to herein as the "Florida Plaintiffs."

16. Plaintiff Ugnius Matkus is an individual and resident of Cook County, Illinois. During the Class Period defined below, Plaintiff Ugnius Matkus transacted FX Instruments with several RFEDs, all of which transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in Illinois, Plaintiff Ugnius Matkus engaged in FX spot transactions with currency pairs including EUR/USD, AUD/USD, AUD/JPY, EUR/JPY, USD/CHF, CHF/JPY, and GBP/USD directly with RFEDs where the RFEDs transacted those FX Instruments directly with Defendants including Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Morgan Stanley, RBS, RBC, SocGen, and UBS. As a result of Defendants' illegal conduct described herein, those RFEDs paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to their customers, including Plaintiff Ugnius Matkus. Thus, Plaintiff Ugnius

Matkus indirectly purchased FX Instruments from one or more Defendants during the Class Period in Illinois, and was injured as a result of Defendants' anticompetitive conduct alleged herein. Plaintiff Ugnius Matkus is referred to herein as the "Illinois Plaintiff."

17. Plaintiff Charles G. Hitchcock III is an individual and resident of Suffolk County, Massachusetts. During the Class Period defined below, Plaintiff Charles G. Hitchcock III transacted FX Instruments with several RFEDs, all of which transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in Massachusetts, Plaintiff Charles G. Hitchcock III engaged in FX spot transactions with currency pairs including GBP/JPY, EUR/USD, AUD/USD, EUR/AUD, and GBP/USD directly with RFEDs where the RFEDs transacted those FX Instruments directly with Defendants including Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, Morgan Stanley, RBS, RBC, SocGen, and UBS. As a result of Defendants' illegal conduct described herein, those RFEDs paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to their customers, including Plaintiff Charles G. Hitchcock III. Thus, Plaintiff Charles G. Hitchcock III indirectly purchased FX Instruments from one or more Defendants during the Class Period in Massachusetts, and was injured as a result of Defendants' anticompetitive conduct alleged herein. Plaintiff Charles G. Hitchcock III purchased FX Instruments for personal use, and his FX Instruments were not used for any business purpose. Plaintiff Charles G. Hitchcock III is referred to herein as the "Massachusetts Plaintiff."

18. Plaintiff Jerry Jacobson is an individual and resident of Wright County, Minnesota. During the Class Period defined below, Plaintiff Jerry Jacobson transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or

more Defendants. Specifically, while both residing in and physically located in Minnesota, Plaintiff Jerry Jacobson engaged in FX spot transactions with currency pairs including AUD/USD, EUR/USD, GBP/USD, USD/CAD, USD/CHF, EUR/GBP, GBP/CHF, and EUR/JPY directly with an RFED where the RFED transacted those FX Instruments directly with Defendants including JPMorgan, Morgan Stanley, and RBS. As a result of Defendants' illegal conduct described herein, the RFED paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to its customers, including Plaintiff Jerry Jacobson. Thus, Plaintiff Jerry Jacobson indirectly purchased FX Instruments from one or more Defendants during the Class Period in Minnesota, and was injured as a result of Defendants' anticompetitive conduct alleged herein. Plaintiff Jerry Jacobson is referred to herein as the "Minnesota Plaintiff."

19. Plaintiff Tina Porter is an individual and resident of Rockingham County, North Carolina. During the Class Period defined below, Plaintiff Tina Porter transacted FX Instruments directly with an RFED that transacted those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in North Carolina, Plaintiff Tina Porter engaged in FX spot transactions directly from an RFED where the RFED purchased those FX Instruments directly from Defendants including JPMorgan, Morgan Stanley, and RBS. As a result of Defendants' illegal conduct described herein, the RFED paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to its customers, including Plaintiff Tina Porter. Thus, Plaintiff Tina Porter indirectly purchased FX Instruments from one

or more Defendants during the Class Period in North Carolina, and was injured as a result of Defendants' anticompetitive conduct alleged herein.

20. Plaintiff Paul Vermillion is an individual and resident of Guilford County, North Carolina. During the Class Period defined below, Plaintiff Paul Vermillion transacted FX Instruments with several RFEDs, all of which entered into those FX Instruments directly with one or more Defendants. Specifically, while both residing in and physically located in North Carolina, Plaintiff Paul Vermillion engaged in FX spot transactions with currency pairs including EUR/USD, USD/CAD, GBP/USD, AUD/USD, and EUR/JPY directly with RFEDs where the RFEDs transacted those FX Instruments directly with Defendants including Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, RBC, RBS, SocGen, Standard Chartered, and UBS. As a result of Defendants' illegal conduct described herein, those RFEDs paid artificially inflated prices for FX Instruments purchased directly from Defendants and Defendants' co-conspirators, and passed on those overcharges on FX Instruments to their customers, including Plaintiff Paul Vermillion. Thus, Plaintiff Paul Vermillion indirectly purchased FX Instruments from one or more Defendants during the Class Period in North Carolina, and was injured as a result of Defendants' anticompetitive conduct alleged herein. Plaintiffs Tina Porter and Paul Vermillion are collectively referred to herein as the "North Carolina Plaintiffs."

II. **Defendants**

21. **Bank of America:** Defendant Bank of America Corporation is a Delaware corporation headquartered at 100 North Tryon Street, Charlotte, North Carolina 28255. Bank of America Corporation is a multi-national banking and financial services corporation, with its investment banking division located at the Bank of America Tower, One Bryant Park, 1111 Avenue of the Americas, New York, New York 10036. Defendant Bank of America, N.A. is a

federally chartered national banking association headquartered at 101 South Tyron Street, Charlotte, North Carolina 28255, and is an indirect, wholly-owned subsidiary of Bank of America Corporation. Defendant Merrill Lynch, Pierce, Fenner & Smith Inc. is a Delaware corporation with its headquarters at One Bryant Park, New York, New York 10036, and is a wholly-owned subsidiary of Bank of America Corporation. Bank of America, N.A. has approximately 140 branches in Arizona, 900 branches in California, 550 branches in Florida, 160 branches in Illinois, 220 branches in Massachusetts, six branches in Minnesota, and 150 branches in North Carolina. Merrill Lynch, Pierce, Fenner & Smith Inc. has nine branch offices in Arizona, over 50 branch offices in California, over 50 branch offices in Florida, 17 branch offices in Illinois, 13 branch offices in Massachusetts, eight branch offices in Minnesota, and 17 branch offices in North Carolina. Defendants Bank of America Corporation, Bank of America, N.A., and Merrill Lynch, Pierce, Fenner & Smith Inc. are referred to collectively in this Complaint as “Bank of America.”

22. **BTMU:** Defendant The Bank of Tokyo Mitsubishi UFJ Ltd. (“BTMU”) is a Japanese company headquartered in Tokyo, Japan. BTMU’s New York Branch is BTMU’s “traditional hub” for FX trading, and is headquartered at 1251 Avenue of the Americas, New York, New York 10002. BTMU is registered with the New York Department of Financial Services (“NYDFS”) as a foreign bank licensed to do business in New York through the BTMU New York Branch. At year-end 2013, BTMU reported for its New York branch gross notional outstanding spot FX contracts of \$2.4 billion and FX derivatives of \$69.8 billion, for a total of \$72.2 billion. *See FOREX*, 2016 WL 1268267, at *6 (S.D.N.Y. Mar. 31, 2016) (denying BTMU’s motion to dismiss for lack of personal jurisdiction). BTMU has a branch in Los Angeles, California and a corporate banking representative office in San Francisco, California; a

branch in Chicago, Illinois; and representative and corporate banking offices in Minneapolis and Minnetonka, Minnesota, respectively.

23. **Barclays:** Defendant Barclays Bank PLC is a British public limited company headquartered in London, England. Barclays Bank PLC is licensed by the NYDFS with a registered address at 745 Seventh Avenue, New York, New York 10019. Defendant Barclays Capital Inc. is a wholly-owned subsidiary of Barclays Bank PLC and engages in investment banking, wealth management, and investment management services. Barclays Capital Inc. is headquartered at 745 7th Avenue, New York, New York 10019. Barclays Bank PLC has a branch office in Miami, Florida. Barclays Capital, Inc. has offices in Los Angeles, Menlo Park and San Francisco, California; an office in Miami, Florida; an office in Chicago, Illinois; and an office in Boston, Massachusetts. Defendants Barclays Bank PLC and Barclays Capital Inc. are referred to collectively in this Complaint as “Barclays.”

24. **BNP Paribas:** Defendant BNP Paribas Group is a French bank and financial services company headquartered in Paris, France. BNP Paribas Group is licensed by the NYDFS with a registered address at 787 Seventh Avenue, New York, New York 10019. BNP Paribas North America, Inc. is a Delaware corporation headquartered at 787 Seventh Avenue, New York, New York 10019. BNP Paribas North America, Inc. provides corporate, investment banking, and securities brokerage services, and is an affiliate of BNP Paribas Group. Defendant BNP Paribas Securities Corp. is a Delaware corporation with its principal place of business in New York, New York. BNP Paribas Securities Corp. is a wholly-owned subsidiary of BNP Paribas North America, Inc. BNP Paribas Prime Brokerage, Inc. is a Delaware corporation with its principal place of business in New York, New York. BNP Paribas Securities Corp. has an office in San Francisco, California; an office in Chicago, Illinois; and an office in Boston,

Massachusetts. Defendants BNP Paribas Group, BNP Paribas North America, Inc., BNP Paribas Securities Corp., and BNP Prime Brokerage, Inc. are referred to collectively in this Complaint as “BNP Paribas.”

25. **Citigroup:** Defendant Citigroup Inc. is a Delaware corporation headquartered at 399 Park Avenue, New York, New York 10022. Defendant Citibank, N.A. is a federally chartered national banking association headquartered at 399 Park Avenue, New York, New York 10022 and is a wholly-owned subsidiary of Defendant Citigroup Inc. Defendant Citicorp is a financial services holding company organized and existing under the laws of Delaware. Defendant Citigroup Global Markets Inc. is a wholly-owned subsidiary of Citigroup Inc., organized and existing under the laws of New York and headquartered at 390 Greenwich Street, New York, New York 10013. Citibank, N.A. has approximately 300 branches in California, 50 branches in Florida, 60 branches in Illinois, and private and commercial banking offices in Boston, Massachusetts. Citigroup Global Markets, Inc. has an office in Scottsdale, Arizona; an office in San Francisco, California; at least one location in South Florida; an office in Naperville, Illinois; an office in Minneapolis, Minnesota; and offices in Charlotte and Winston Salem, North Carolina. Defendants Citigroup Inc., Citibank, N.A., Citicorp, and Citigroup Global Markets Inc. are referred to collectively in this Complaint as “Citigroup.”

26. **Credit Suisse:** Defendant Credit Suisse Group AG is a Swiss holding company headquartered in Zurich, Switzerland. Defendant Credit Suisse AG is a wholly-owned subsidiary of Credit Suisse Group AG and is a bank organized under the laws of Switzerland, with its principal place of business located in Zurich, Switzerland. Credit Suisse AG is licensed by the NYDFS and operates a foreign branch with a registered address at 11 Madison Avenue, New York, New York 10010. Defendant Credit Suisse Securities (USA) LLC is a Delaware

limited liability company headquartered at 11 Madison Avenue, New York, New York 10010, and is a wholly-owned subsidiary of Credit Suisse Group AG. Credit Suisse Group AG has four offices in California: two in San Francisco, one in Los Angeles, and one in San Diego. It also has an office in West Palm Beach, Florida; an office in Chicago, Illinois; and a corporate center in Raleigh, North Carolina. Credit Suisse Securities (USA) LLC has offices in Los Angeles and San Francisco, California and an office in Chicago, Illinois. Defendants Credit Suisse Group AG, Credit Suisse AG, and Credit Suisse Securities (USA) LLC are referred to collectively in this Complaint as “Credit Suisse.”

27. **Deutsche Bank:** Defendant Deutsche Bank AG is a German financial services company headquartered in Frankfurt, Germany. Deutsche Bank AG is licensed by the NYDFS with a registered address at 60 Wall Street, 4th Floor, New York, New York 10005. Defendant Deutsche Bank Securities Inc. is a Delaware corporation with its principal place of business at 60 Wall Street, New York, New York, 10005. Deutsche Bank Securities Inc. is an indirect, wholly-owned subsidiary of Deutsche Bank AG. Deutsche Bank AG has a branch or office in each of the following six California cities: Costa Mesa, Los Angeles, Menlo Park, Palo Alto, San Francisco and Santa Ana. It also has two offices in Jacksonville and one in Miami, Florida; an office in Chicago, Illinois; three offices or branches in Boston, Massachusetts; and four offices or branches in North Carolina: three in Cary and one in Charlotte. Deutsche Bank Securities Inc. has offices in San Francisco, Los Angeles, and Santa Ana, California; an office in Jacksonville, Florida; an office in Chicago, Illinois; and an office in Winston Salem, North Carolina. Defendants Deutsche Bank AG and Deutsche Bank Securities Inc. are referred to collectively in this Complaint as “Deutsche Bank.”

28. **Goldman Sachs:** Defendant The Goldman Sachs Group, Inc. is a Delaware corporation headquartered at 200 West Street, New York, New York 10282. The Goldman Sachs Group, Inc. is a bank holding company and a financial holding company. Defendant Goldman, Sachs & Co. is a wholly-owned subsidiary of The Goldman Sachs Group, Inc. and is its principal operating subsidiary in the United States. Goldman, Sachs & Co. is located at 200 West Street, New York, New York 10282. The Goldman Sachs Group, Inc. and Goldman, Sachs & Co. have offices in Los Angeles and San Francisco, California; offices in Miami and West Palm Beach, Florida; offices in Chicago, Illinois; and offices in Boston Massachusetts. Defendants The Goldman Sachs Group, Inc. and Goldman, Sachs & Co. are referred to collectively in this Complaint as “Goldman Sachs.”

29. **HSBC:** Defendant HSBC Bank PLC is a wholly-owned subsidiary of HSBC Holdings PLC, and is a United Kingdom public limited company headquartered in London, England. Defendant HSBC North America Holdings, Inc. is a Delaware corporation headquartered at 452 5th Avenue, New York, New York 10018, and is a wholly-owned subsidiary of HSBC Holdings PLC. Defendant HSBC North America Holdings, Inc. is the holding company for HSBC Bank plc’s operations in the United States. Defendant HSBC Bank USA, N.A. is a national banking association with its principal place of business in New York, New York, and is an indirect wholly-owned subsidiary of HSBC North America Holdings, Inc. Defendant HSBC Securities (USA) Inc. is a Delaware corporation with its principal place of business at 452 Fifth Avenue, New York, NY, United States. HSBC Bank USA, N.A. has 35 branch offices in California and 17 branch offices in Florida. HSBC Securities (USA) Inc. has an office in Mettawa, Illinois. Defendants HSBC Bank PLC; HSBC North America Holdings,

Inc.; HSBC Bank USA, N.A.; and HSBC Securities (USA) Inc. are referred to collectively in this Complaint as “HSBC.”

30. **JPMorgan:** Defendant JPMorgan Chase & Co. is a Delaware corporation headquartered at 270 Park Avenue, 38th Floor, New York, New York 10017. Defendant JPMorgan Chase Bank, N.A. is a federally-chartered national banking association, also headquartered at 270 Park Avenue, 38th Floor, New York, New York 10017, and is a wholly-owned subsidiary of Defendant JPMorgan Chase & Co. JPMorgan Chase & Co. has corporate offices in Phoenix, Arizona; Los Angeles, California; Tampa, Florida; and Chicago, Illinois. JPMorgan Chase Bank, N.A. has approximately 250 branches in Arizona, 1,000 branches in California, 400 branches in Florida, 360 branches in Illinois, and a limited service trust office in Boston, Massachusetts. Defendants JPMorgan Chase & Co. and JPMorgan Chase Bank, N.A. are referred to collectively in this Complaint as “JPMorgan.”

31. **Morgan Stanley:** Defendant Morgan Stanley is a Delaware corporation headquartered at 1585 Broadway, New York, New York 10036. Defendant Morgan Stanley & Co., LLC is a limited liability company organized and existing under the laws of Delaware, with its principal place of business in New York, New York. Morgan Stanley & Co., LLC is a wholly-owned subsidiary of Morgan Stanley. Defendant Morgan Stanley & Co. International plc is a United Kingdom public limited company with headquarters in London, England. Morgan Stanley has offices in Los Angeles, Menlo Park, and San Francisco, California; offices in Boca Raton and Miami, Florida; an office in Chicago, Illinois; and an office in Boston, Massachusetts. Defendants Morgan Stanley; Morgan Stanley & Co., LLC; and Morgan Stanley & Co. International plc are referred to collectively in this Complaint as “Morgan Stanley.”

32. **RBC:** Defendant RBC Capital Markets LLC (“RBC”) is a limited liability company incorporated in Minnesota, with its principal place of business and headquarters located at Three World Financial Center, 200 Vesey Street, 5th Floor, New York, New York 10281. Prior to 2010, RBC was RBC Capital Markets Corporation, which was also a Minnesota corporation headquartered in New York, New York. RBC has offices in Phoenix, Arizona; Los Angeles and San Francisco, California; Jacksonville and St. Petersburg, Florida; Chicago, Illinois; Boston, Massachusetts; Minneapolis, Minnesota; and Charlotte, North Carolina.

33. **RBS:** Defendant The Royal Bank of Scotland PLC is a United Kingdom public limited company headquartered in Edinburgh, Scotland and a wholly owned subsidiary of The Royal Bank of Scotland Group PLC. Defendant Royal Bank of Scotland PLC is licensed by the NYDFS with a registered address at 1095 Avenue of the Americas, New York, New York 10036. Defendant RBS Securities Inc. is a Delaware corporation headquartered at 600 Washington Boulevard, Stamford, Connecticut 06901. RBS Securities Inc. has a sales and trading office in San Francisco, California. Defendants Royal Bank of Scotland PLC and RBS Securities, Inc., are referred to collectively in this Complaint as “RBS.”

34. **SocGen:** Defendant Société Générale S.A. (“SocGen”) is a financial services company headquartered in Paris, France. SocGen’s New York Branch is headquartered at 1221 Avenue of the Americas, New York, New York 10020. SocGen is licensed by the NYDFS with a registered address of 245 Park Avenue, New York, New York 10167. One of the SocGen New York Branch’s “primary activities” is the sale of FX Instruments, and its heads of emerging market FX trading and G10 FX trading are based in New York. At year-end 2013, SocGen reported for its New York branch gross notional outstanding spot FX contracts of approximately \$13 million and FX derivatives of \$21.6 billion. *See id.* (denying SocGen’s motion to dismiss

the FX direct purchaser complaint against SocGen for lack of personal jurisdiction). According to SocGen’s Twitter bio, SocGen opened its first office in the United States in 1938 and “is one of the largest foreign banking organizations in the US.” SocGen has representative offices in Irvine and Santa Monica, California; a branch office in Chicago, Illinois; and a branch office in Boston, Massachusetts.

35. **Standard Chartered:** Defendant Standard Chartered Bank (“Standard Chartered”) is incorporated under the laws of England and Wales, with headquarters in London, England. Standard Chartered is licensed by the NYDFS with a registered address at 1095 Avenue of the Americas, New York, New York 10036. Standard Chartered’s New York Branch, located at 1095 Avenue of the Americas, New York, New York 10036, is the headquarters for Standard Chartered’s “Americas” business and “primarily conducts a U.S. dollar clearing business,” including the sale of FX Instruments. At year-end 2013, Standard Chartered Bank reported for its New York branch gross notional outstanding spot FX contracts of \$1.9 billion and FX derivatives of \$141.4 billion. *See id.* (granting motion to dismiss the FX direct purchaser complaint for lack of personal jurisdiction as to Standard Chartered Bank’s parent company Standard Chartered plc, which does not conduct business in New York, but permitting an application to substitute Standard Chartered Bank as a defendant). Standard Chartered has a branch in San Francisco, California and at least one location in Florida.

36. **UBS:** Defendant UBS AG is a Swiss company based in Basel and Zurich, Switzerland, and is a wholly-owned subsidiary of Defendant UBS Group AG. Defendant UBS Group AG is a Swiss company headquartered in Zurich, Switzerland. Defendant UBS Securities LLC is a Delaware limited liability company headquartered at 677 Washington Blvd, Stamford, Connecticut 06901, and is a wholly-owned subsidiary of UBS AG. UBS AG has branch offices

in Mill Valley and San Diego, California; Miami and Gainesville, Florida; and Chicago, Illinois. UBS Securities LLC has offices in San Francisco, California and Chicago, Illinois. Defendants UBS AG, UBS Group AG, and UBS Securities LLC are referred to collectively in this Complaint as “UBS.”

37. “Defendant” or “Defendants,” as used herein, includes all Defendants named specifically above, as well as all of the named Defendants’ predecessors, direct or indirect parents, subsidiaries, or divisions, including entities that merged with or were acquired by the named Defendants that played a material role in the unlawful acts alleged in this Complaint.

38. Whenever reference is made to any act of any corporation, the allegation means that the corporation engaged in the act by or through its directors, officers, employees, or agents while they were actively engaged in the management, direction, control, or transaction of the corporation’s business or affairs.

39. Various other persons, firms, and corporations, that are unknown and not named as Defendants, have participated as co-conspirators with Defendants and have performed acts and/or made statements in furtherance of the conspiracy. Defendants are jointly and severally liable for the acts of their co-conspirators, whether named or not the co-conspirators are named as Defendants in this Complaint. “Co-conspirators,” as used herein, includes direct or indirect parents, subsidiaries, and divisions of all co-conspirator entities.

CLASS ACTION ALLEGATIONS

40. The New York Plaintiff brings this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants pursuant to New York antitrust law on behalf of the following proposed New York indirect purchaser class or subclass (the “New York Class”):

New York Class: All persons and entities who, between December 1, 2007 and December 31, 2013 (inclusive) (the “Class Period”), indirectly purchased an FX Instrument⁴ from a Defendant or co-conspirator in New York and/or while domiciled in New York, by entering into an FX Instrument with a member of the Direct Settlement Class,⁵ where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator.

41. The Arizona Plaintiff brings this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants pursuant to Arizona antitrust law on behalf the following proposed Arizona indirect purchaser class or subclass (the “Arizona Class”):

Arizona Class: All persons and entities who, during the Class Period, indirectly purchased an FX Instrument from a Defendant or co-conspirator in Arizona and/or while domiciled in Arizona, by entering into an FX Instrument with a member of the Direct Settlement Class, where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator.

⁴ See *supra* note 2.

⁵ “Direct Settlement Class” refers to the class of direct purchasers who purchased an FX Instrument directly from one or more Defendants or co-conspirators, which was granted preliminarily class certification for settlement purposes in *FOREX*, ECF No. 536 (“Preliminary Approval Order”). The Preliminary Approval Order defines the Direct Settlement Class as:

All Persons who, between January 1, 2003 and the date of the Preliminary Approval Order, entered into an FX Instrument directly with a Defendant, a direct or indirect parent, subsidiary, or division of a Defendant, a Released Party, or coconspirator where such Persons were either domiciled in the United States or its territories or, if domiciled outside the United States or its territories, transacted FX Instruments in the United States or its territories. Specifically excluded from the Direct Settlement Class are Defendants; Released Parties; co-conspirators; the officers, directors, or employees of any Defendant, Released Party, or co-conspirator; any entity in which any Defendant, Released Party, or co-conspirator has a controlling interest; any affiliate, legal representative, heir, or assign of any Defendant, Released Party, or co-conspirator and any person acting on their behalf; provided, however, that Investment Vehicles shall not be excluded from the definition of the Direct Settlement Class. Also excluded from the Direct Settlement Class are any judicial officer presiding over this action and the members of his/her immediate family and judicial staff, and any juror assigned to this Action.

See also infra at Factual Allegations, Section V (“Direct Purchaser Litigation and Settlements”). The Preliminary Approval Order also certified an “Exchange-Only Settlement Class” comprised of persons and entities that entered into an FX Exchange-Traded Instrument directly on a U.S. exchange. Although the Direct Class Settlement and the Exchange-Only Class Settlement (collectively, the “Direct/Exchange-Only Settlements”) were entered into only between the Direct Purchaser Class Plaintiffs and the “Settling Defendants,” the Direct Settlement Class is defined to include all direct purchasers who entered into an FX instrument with *any* Defendant named in *FOREX*, including the “Non-Settling Defendants.” *See, e.g.*, *FOREX*, ECF No. 653-2 (Direct Purchaser Class Plaintiffs’ Proposed Notice) (defining “Settling Defendants” and “Non-Settling Defendants” collectively as “Defendants”). The Defendants referred to in the Direct Settlement Class definition (including both the Settling Defendants and the Non-Settling Defendants) are identical to the Defendants named in this Complaint.

42. The California Plaintiffs bring this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants pursuant to California antitrust and consumer protection laws on behalf of the following proposed California indirect purchaser class or subclass (the “California Class”):

California Class: All persons and entities who, during the Class Period, indirectly purchased an FX Instrument from a Defendant or co-conspirator and were thereby injured in California by entering into an FX Instrument with a member of the Direct Settlement Class, where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator.

43. The Florida Plaintiffs bring this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants except for Bank of America, N.A.; HSBC Bank USA, N.A.; and JPMorgan Chase Bank, N.A.; pursuant to Florida consumer protection law on behalf of the following proposed Florida indirect purchaser class or subclass (the “Florida Class”):

Florida Class: All persons and entities who, during the Class Period, indirectly purchased an FX Instrument from a Defendant or co-conspirator in Florida and/or while domiciled in Florida, by entering into an FX Instrument with a member of the Direct Settlement Class, where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator.

44. The Illinois Plaintiff brings this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants except for Bank of America, N.A.; HSBC Bank USA, N.A.; and JPMorgan Chase Bank, N.A.; pursuant to Illinois antitrust law on behalf of the following proposed Illinois indirect purchaser class or subclass (the “Illinois Class”):

Illinois Class: All persons and entities who, during the Class Period, indirectly purchased an FX Instrument from a Defendant or co-conspirator in Illinois and/or while domiciled in Illinois, by entering into an FX Instrument with a member of the Direct Settlement Class, where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator.

45. The Massachusetts Plaintiff brings this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants pursuant to Massachusetts consumer protection law on behalf the following proposed Massachusetts indirect purchaser class or subclass (the “Massachusetts Class”):

Massachusetts Class: All persons and entities who, during the Class Period, indirectly purchased an FX Instrument from a Defendant or co-conspirator in Massachusetts and/or while domiciled in Massachusetts, by entering into an FX Instrument with a member of the Direct Settlement Class, where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator.

46. The Minnesota Plaintiff brings this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants pursuant to Minnesota antitrust law on behalf the following proposed Minnesota indirect purchaser class or subclass (the “Minnesota Class”):

Minnesota Class: All persons and entities who, during the Class Period, indirectly purchased an FX Instrument from a Defendant or co-conspirator in Minnesota and/or while domiciled in Minnesota, by entering into an FX Instrument with a member of the Direct Settlement Class, where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator. The Minnesota Class seeks relief against all Defendants here.

47. The North Carolina Plaintiffs bring this action individually and as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure, seeking damages against all Defendants pursuant to North Carolina antitrust law on behalf the following proposed North Carolina indirect purchaser class or subclass (the “North Carolina Class”):

North Carolina Class: All persons and entities who, during the Class Period, indirectly purchased an FX Instrument from a Defendant or co-conspirator and were thereby injured in North Carolina, by entering into an FX Instrument with a member of the Direct Settlement Class, where the Direct Settlement Class member entered into the FX Instrument directly with a Defendant or co-conspirator.

48. The proposed New York, Arizona, California, Florida, Illinois, Massachusetts, Minnesota, and North Carolina Classes are referred to collectively herein as the “State Classes.”

49. Excluded from the Classes are Defendants and their co-conspirators; the officers, directors, and employees of any Defendant or co-conspirator; any entity in which any Defendant or co-conspirator has a controlling interest; any affiliate, legal representative, heir, or assign of any Defendant or co-conspirator; federal, state, and municipal government entities and agencies; any judicial officer presiding over this action and the members of his/her immediate family and judicial staff; and any juror assigned to this action.

50. Also excluded from the Classes are all indirect purchases of FX Instruments where the direct purchaser was operating outside of the U.S. at the time the direct purchase was made and the purchase was made with the foreign desk of a Defendant.

51. While Plaintiffs do not know the exact number of the members of the proposed Classes, Plaintiffs believe there are (at least) thousands of members in each Class. The Classes are readily ascertainable from existing records of members of the Direct Settlement Class.

52. Plaintiffs’ claims are typical of the claims of the members of the Classes. Plaintiffs and members of the Classes sustained damages arising out of Defendants’ common course of conduct in violation of federal antitrust laws, state antitrust laws, and state consumer protection laws.

53. Common questions of law and fact exist as to all members of the Classes. This is particularly true given the nature of Defendants’ and their co-conspirators’ conspiracy, which was generally applicable to all members of the Classes, thereby making appropriate relief with respect to each Class as a whole. Such questions of law and fact common to the Classes include, but are not limited to:

- a. Whether Defendants and their co-conspirators engaged in a combination and conspiracy among themselves to fix, raise, maintain, or stabilize the prices of FX Instruments sold in the United States;
- b. The identities of the participants of the alleged conspiracy;
- c. The duration of the alleged conspiracy and the acts carried out by Defendants and their co-conspirators in furtherance of the conspiracy;
- d. Whether the alleged conduct of Defendants and their co-conspirators caused injury to Plaintiffs and the members of the Classes;
- e. The effects of the alleged conspiracy on the prices of FX Instruments sold in the United States during the Class Period;
- f. Whether Plaintiffs and the members of the Classes had any reason to know or suspect the conspiracy, or any means to discover the conspiracy;
- g. Whether Defendants and their co-conspirators fraudulently concealed the conspiracy's existence from Plaintiffs and the members of the Classes;
- h. For the New York Class, whether the alleged conspiracy violated New York General Business Laws § 340, *et seq.* (the Donnelly Act), as alleged in the First Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations;
- i. For the Arizona Class, whether the alleged conspiracy violated Arizona Revised Statutes, §§ 44-1401, *et seq.* (the Arizona Antitrust Act), as alleged in the Second Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations;

j. For the California Class, whether the alleged conspiracy violated California Business and Professions Code § 16720, *et seq.* (the Cartwright Act), as alleged in the Third Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations;

k. For the California Class, whether the alleged conspiracy violated California Business and Professions Code § 17200, *et seq.* (California's Unfair Competition Law), as alleged in the Fourth Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations;

l. For the Florida Class, whether the alleged conspiracy violated Fla. Stat. § 501.201, *et seq.* (the Florida Deceptive and Unfair Trade Practices Act), as alleged in the Fifth Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations;

m. For the Illinois Class, whether the alleged conspiracy violated 740 Ill. Comp. Stat. 10/1, *et seq.* (the Illinois Antitrust Act), as alleged in the Sixth Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations;

n. For the Massachusetts Class, whether the alleged conspiracy violated Mass. Gen. Laws ch. 93A, §1 *et seq.* (the Massachusetts Consumer Protection Act), as alleged in the Seventh Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations; and

o. For the Minnesota Class, whether the alleged conspiracy violated Minn. Stat. §§ 325D.49 to 325D.66 (the Minnesota Antitrust Law of 1971), as alleged in the Eighth Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations.

p. For the North Carolina Class, whether the alleged conspiracy violated N.C. Gen. Stat. § 75-1, *et seq.* (the North Carolina Unfair Trade Practice Act), as alleged in the Ninth Claim for Relief, and the appropriate class-wide measures of damages and related equitable relief for such violations.

54. Plaintiffs' claims are typical of the claims of the members of the Classes, and Plaintiffs will fairly and adequately protect the interests of the Classes. Plaintiffs and all members of the Classes were similarly affected by Defendants' wrongful conduct in that they were overcharged for FX Instruments purchased indirectly from Defendants and/or Defendants' co-conspirators.

55. Plaintiffs' claims arise out of the same common course of conduct giving rise to the claims of the other members of the Classes. Plaintiffs' interests are coincident with, and not antagonistic to, those of the other members of the Classes. Plaintiffs are represented by counsel who are competent and experienced in the prosecution of antitrust and class action litigation.

56. The questions of law and fact common to the members of the Classes predominate over any questions affecting only individual members, including legal and factual issues relating to liability and damages.

57. Class action treatment is the superior method for the fair and efficient adjudication of the controversy, in that, among other things, such treatment will permit a large number of similarly situated persons to prosecute their common claims in a single forum simultaneously, efficiently, and without the unnecessary duplication of evidence, effort and expense that numerous individual actions would engender. The benefits of proceeding through the class mechanism, including providing injured persons or entities with a method for obtaining

redress for claims that might not be practicable to pursue individually, substantially outweigh any difficulties that may arise in the management of this class action.

58. The prosecution of separate actions by individual members of the Classes would create a risk of inconsistent or varying adjudications, establishing incompatible standards of conduct for the Defendants.

FACTUAL ALLEGATIONS

I. OVERVIEW OF THE FX MARKET

A. Background

59. The FX market is the global financial market in which currencies are traded. It is the largest, most actively traded, and most liquid financial market in the world. Global FX trading grew from an average of \$1.9 trillion per day in April 2004 to \$5.3 trillion per day in April 2013. According to a report by the Bank for International Settlements (BIS), this rapid growth in trading volume was due in part to increased market participation by “the emergence of retail investors,” including individuals and smaller institutions.

60. There are over 200 different currencies used around the world, each with a distinct three-letter currency code used by FX traders. The ten most heavily traded currencies in the world—called the “Group of 10,” or “G10” currencies—are the U.S. dollar (USD), the Canadian dollar (CAD), the euro (EUR), the British pound (GBP), the Swiss franc (CHF), the New Zealand dollar (NZD), the Australian dollar (AUD), the Japanese yen (JPY), the Norwegian krone (NOK), and the Swedish krona (SEK).

61. The market for facilitating and executing FX trades is highly concentrated. A large majority of all FX trades are transacted by Defendants. Other market participants include smaller dealer banks, central banks, smaller commercial banks, credit card companies and their

customers, non-financial corporations, insurance companies, investment funds, and individual investors.

62. The FX traders employed by Defendants were part of a geographically and socially concentrated group. They lived in close proximity, attended the same social gatherings, and communicated frequently. The close social and professional ties among FX traders facilitated and provided incentives for the conspiracy alleged herein. As one former Citigroup trader acknowledged, “[t]his is a market in which price fixing and collusion could actually work.”

63. FX trades may be conducted either over-the-counter (“OTC”) directly with another party, or on a centralized exchange. During the Class Period, approximately 98 percent of FX trading occurred OTC, and a majority of those trades involved one or more Defendants. The remaining 2 percent of all FX trades during the Class Period were made on U.S. exchanges.

64. The OTC FX market is open and actively traded 24 hours a day during the week. The FX market opens Monday at 7 a.m. local time in New Zealand. One hour later, Sydney opens, followed by Tokyo, Hong Kong, and Singapore. Later, trading shifts to Europe, where the main financial centers are London, Frankfurt, Zürich, Geneva, Paris, and Milan. New York and London (the two largest FX trading centers) are open simultaneously for four hours, between 8:00 a.m. and 12:00 p.m. U.S. Eastern Time (“ET”), which is between 1:00 p.m. and 5:00 p.m. London time. The New York FX market is open from 8:00 a.m. ET to 5:00 p.m. ET, and London is open from 3:00 a.m. to 12:00 p.m. ET.

65. FX market centers officially close at 5:00 p.m. local time, but the market does not close during the week because, except on Friday, the new trading day starts immediately in other cities. With the advent of electronic trading, it is possible to place FX trades over the weekends.

66. Like the OTC market, trading on centralized U.S. financial exchanges is available 24 hours a day. The two most actively traded U.S. FX exchanges are the Chicago Mercantile Exchange (“CME”) and the Intercontinental Exchange (“ICE”).

67. Currencies are bought or sold in “currency pairs” of two different currencies. The price to buy or sell a given currency pair is reflected by its exchange rate. For example, EUR/USD refers to the exchange rate for the purchase or sale of euros in exchange for U.S. dollars. In April 2013, the four most-traded currency pairs were EUR/USD (24.1 percent of all net FX trade volume), USD/JPY (18.3 percent), GBP/USD (8.8 percent), and AUD/USD (6.8 percent). Approximately 86.9 percent of daily FX trading in April 2013 had the U.S. dollar on one side of the currency pair.

68. The advent of electronic FX trading has had a substantial impact on the FX market. Although large bank dealers such as Defendants still account for a large majority of all trades, electronic trading has enabled smaller companies and individuals to trade FX. Electronic trading also enabled traders to employ new FX trading strategies. Large, sophisticated traders have employed strategies such as rapid-fire arbitrage and algorithmic trading. Electronic trading also enhanced the ability of Defendants and co-conspirators to collusively manipulate FX benchmark rates, as alleged herein.

69. Traders in the FX market engage in several types of transactions. According to the BIS, the four most common types of FX transactions are:

- a. **Spot transaction** – an agreement to exchange sums of currency at an agreed-upon exchange rate on a value date that is within two business days’ time;
- b. **Forward outright transaction** – an agreement to exchange sums of currency at an agreed-upon exchange rate on a value date that will be in more than two business days’ time;

- c. **Forward swap** – a spot transaction plus a forward outright transaction, at a different exchange rate and in the reverse direction; and
- d. **Currency option** – a “put” or a “call” option contract on a specified quantity of FX. A “put” option contract gives the owner the right to sell a specified quantity of currency at a specified exchange rate. A “call” option contract gives the holder the right to buy a specified quantity of currency at a specified rate.

70. In 2013, forward swaps accounted for 42 percent of the total FX trade volume. Spot transactions accounted for 38 percent, forward outright transactions accounted for 13 percent, and currency options and other FX transactions accounted for 7 percent.

71. Spot transactions occur in the private OTC market, which is dominated by Defendants. To initiate a spot transaction, a customer contacts a dealer bank, such as one of the Defendants, for a quote. These dealer banks are known as “market makers” or “liquidity providers.”

72. A spot transaction occurs when one party contacts a dealer for a “bid-ask” quote on a designated quantity of currency, and the party accepts the dealer’s quote. The “bid” is the price at which the dealer is willing to buy a given quantity of currency, and the “ask” is the price at which the dealer is willing to sell the same quantity of currency. FX dealers provide exchange rate quotes on demand.

73. Dealers generally provide quotes for USD and EUR to four decimal points, with the final digit known as a “percentage in point” or “pip.” For example, suppose EUR/USD is quoted 1.1952-1.1954 on \$10 million. The first number, 1.1952, is the bid, and the second, 1.1954, is the ask. The party receiving the quote can either sell \$10 million USD and receive €8,366,800.54 EUR (\$1.1952 per Euro) in exchange, or purchase \$10 million USD for €8,365,400.70 EUR (\$1.1954 per Euro).

74. The difference between the bid and the ask is called the “bid-ask spread.” The bid-ask spread enables FX dealers to profit from FX trades by buying and selling FX at different exchange rates.

75. FX traders can execute FX spot transactions by a direct telephone call, by sending an electronic request to a dealer, or through an electronic trading system. Electronic trading systems are computer trading platforms that customers can use to execute orders with dealers over a network. Electronic trading systems can be proprietary platforms operated by a single dealer, or a multi-bank platforms that allows customers to trade with multiple dealers. Major multi-bank FX trading platforms include Reuters, Bloomberg, EBS, Hotspot, and Currenex.

76. Dealer banks employ salespeople to interact with customers through electronic platforms, electronic messages, and telephone calls. Dealer banks also employ FX currency traders to oversee bid-ask quotes and process trades. A dealer’s salespeople and traders are in constant communication. Salespeople inform the traders of incoming potential orders, confirm bid-ask quotes, and convey orders to the trading desk for processing. Traders receive information about potential and pending trades before the trades are actually processed. Traders also record and analyze their customers’ trading histories. As a result, dealers can often predict a customer’s trading patterns, even before a customer places an order.

77. Entities such as RFEDs that trade FX Instruments directly with dealer banks, such as Defendants, often resell those instruments to retail FX customers, such as individual and non-dealer entity customers, i.e., Plaintiffs. Retail FX customers such as Plaintiffs, trade FX Instruments with RFEDs for a variety of purposes, including long and short-term investing, portfolio diversification, and to hedge their foreign investments against risks of foreign currency fluctuations.

78. Spot transaction exchange rates are the foundation for pricing of all FX Instruments. The prices for forward outright trades, forward swap trades, currency option contracts, and all other FX Instruments are all derived from the underlying FX spot rates.

79. Because all FX transactions are affected by spot prices, Defendants' manipulation of benchmark spot rates had widespread effects on all FX transactions throughout the Class Period.

B. Benchmark Rates

80. In placing FX spot trades, direct-purchaser customers often use what are called benchmark rates, daily fixing rates, or "Fixes." A Fix is a published exchange rate based on FX trades placed in a moment in time or a short interval of time. Several Fixes are published by private parties and central banks. To place an order at a Fix, a direct-purchaser customer gives an FX dealer instructions to buy or sell a quantity of currency at a specific Fix. The dealer guarantees execution at whatever rate the Fix is later posted.

81. The Fixes have widespread effects on all FX transactions. Many businesses—including credit card companies, consumer banks, and credit unions—determine the rates at which they sell FX to their customers based on the Fixes.

82. Prior to the publishing of the Fixes, customers will place orders with dealers to buy or sell a specific quantity of FX at a specified Fix. Because these orders are placed in advance of the fixing rates being published, dealers that accept spot trade orders at the Fixes are exposed to unexpected movements in currency prices.

83. Dealers can take advantage of the interim between the time a customer places a fixing rate order and the time a Fix is published. If a dealer is able to buy the ordered quantity of currency at a price that is less than the fixing rate, the dealer profits from the customer's order. However, if a dealer pays more than the fixing rate, it loses money on the order.

84. Because the Fixes are so widely recognized as benchmark rates in the FX market, they play a crucial role in FX trading and in the pricing of all FX Instruments.

1. WM/Reuters

85. While there are a number of published Fixes available to FX market participants, the most widely used Fix is the WM/Reuters Closing Spot Rates (the “WM/Reuters Fix” or “4:00 p.m. Fix”), which are set at 4:00 p.m. London time (11:00 a.m. New York time). WM/Reuters is a joint venture between the WM Company (a wholly-owned subsidiary of State Street Corporation) and Thomson Reuters Corporation. The WM/Reuters Closing Spot Rates are widely used because they are set around the time when the FX market is most liquid – near the end of the trading day in London, while the New York market is also open. WM/Reuters calculates fixing rates for major currencies every half hour from 6:00 a.m. in Hong Kong/Singapore to 10:00 p.m. in the U.K., and they publish fixing rates for spot and forward transactions.

86. WM/Reuters calculates the 4:00 p.m. Fix based on actual bids and offers placed on certain electronic trading systems during a one-minute window (“the fix period”). The fix period begins 30 seconds before 4:00 p.m. London time and ends 30 seconds after. WM/Reuters uses bids and offers placed on the Currenex, Reuters Dealing 3000, and EBS electronic trading systems.

87. The consolidation of trading information and calculation of the 4:00 p.m. Fix rates is automated. Throughout the Class Period, WM/Reuters calculated the 4:00 p.m. Fix rates based on the median exchange rates of the FX transactions placed during the fix period, but the volumes of those trades placed during the fix period were not taken into account. This made the 4:00 p.m. Fix especially vulnerable to concerted manipulation.

88. WM/Reuters also provides fix rates for FX forwards, which are published as premiums or discounts to the WM/Reuters spot rates. Thus, when the WM/Reuters Fix rates were manipulated by Defendants, WM/Reuters forward fix rates were also directly affected.

2. The ECB Rates

89. The European Central Bank (“ECB”) reference rate provides FX spot rate Fixes for currency pairs that are traded against the euro. After the WM/Reuters Fixes, the ECB reference rates (“ECB Fix” or “1:15 p.m. Fix”) are the second-most widely used global FX benchmark rate.

90. The ECB publishes the exchange rates for various euro-denominated currency pairs, as determined by the European Central Bank, based on FX spot trades placed at or around 1:15 p.m. GMT. For each currency pair, the ECB publishes one rate for the 1:15 p.m. Fix. The ECB Fixes are published on the ECB’s website shortly after they are calculated.

C. The FX Market Is Concentrated and Dominated by Defendants

91. Beginning in the late 1990s, the FX market experienced a significant increase in concentration.

92. Defendants dominated the FX market throughout the Class Period, and continue to do so today. In 2013, Defendants collectively controlled more than 90 percent of the global FX market. According to the 2012 and 2013 FX Surveys by industry publication EUROMONEY, the individual and aggregate shares of the global FX market for Defendants and their affiliated corporations in 2012 and 2013 were, respectively:

Defendant	2012 Market Share (Rank)	2013 Market Share (Rank)
Deutsche Bank	14.57% (1)	15.18% (1)
Citigroup	12.26% (2)	14.90% (2)
Barclays	10.95% (3)	10.24% (3)
UBS	10.48% (4)	10.11% (4)

HSBC	6.72% (5)	6.93% (5)
JPMorgan	6.60% (6)	6.07% (6)
RBS	5.86% (7)	5.62% (7)
Credit Suisse	4.68% (8)	3.70% (8)
Morgan Stanley	3.52% (9)	3.15% (9)
Goldman Sachs	3.12% (10)	2.75% (11)
BNP Paribas	2.63% (11)	2.52% (12)
Bank of America	2.41% (12)	3.08% (10)
SocGen	1.76% (13)	1.57% (13)
Standard Chartered	0.89% (18)	0.91% (17)
RBC	0.84% (19)	0.88% (18)
BTMU	0.24% (30)	0.31% (23)
Defendants' Aggregate Market Share:	90.86%	90.92%

93. The FX market in the U.S. is even more concentrated and dominated by Defendants than the FX global market. According to the Federal Reserve Bank of New York, the top ten banks in April 2013 were responsible for 98 percent of all FX spot trade volume in the United States, and the top five banks alone accounted for 80 percent. According to the Foreign Exchange Committee's April 2012 survey of the North American FX market, the five largest FX dealers in North America had a 75 percent market share for spot transactions, and a 61.2 percent market share for all forward outright transactions. The next five largest dealers had a 17.7 percent market share for spot transactions and a 26.5 percent market share for forward outright transactions.

94. Traders employed by Defendants have significant influence on the FX market. Collectively, these traders account for a substantial majority of all FX trades. Defendant traders are a small, interconnected group. Many have worked with one another in prior trading jobs, and traders frequently communicate and socialize with traders at other Defendant banks. The strong familiarity among traders facilitated Defendants' collusive conduct alleged herein.

D. The FX Market Is Susceptible to Collusion

95. The global FX market lacks a central organizing body, making it one of the least regulated financial markets in the world. Most trading takes place in the OTC market, away from centralized exchanges.

96. No centralized exchange or institution publishes real-time trade information for the OTC market. Defendants' proprietary dealing platforms allow their traders to view real-time orders and trade volume data, but Defendants do not make this information available to private traders. Absent an agreement to collude, each individual Defendant would not have access to information about other Defendants' trade orders, and it would be in the economic interest of each Defendant to keep its own trade data confidential.

97. Based on trade volume and price information from FX trades, Defendants can analyze trading patterns, predict the direction of FX market movements, and exploit that information. A single dealer can only predict FX trading patterns if it has access to a large sample size of FX trading data. Private traders do not have this proprietary trading data, and are therefore unable to analyze and accurately predict FX trading patterns.

98. Defendants' ability to predict and exploit FX trading patterns substantially grows when they share confidential trade information with one another.

99. Throughout the Class Period, Defendants maintained internal accounts allocable to individual FX traders, sometimes called "P-books," that allowed traders to trade and speculate on FX with bank funds. Revenues generated in an individual trader account accrued to the benefit of the trader's employer bank, and those revenues were taken into account by Defendants for purposes of evaluating and determining each trader's performance, promotion potential, salary, and bonuses. Because aggregate trade data from multiple Defendants allows traders to predict and manipulate the movement of the market around the times of the Fixes, Defendants'

maintenance of these “P-book” accounts incentivized traders to collude with traders at other Defendant dealers to manipulate FX rates.

100. The sharing of confidential customer FX information by FX traders violates the Federal Reserve Bank of New York’s “Guidelines for Foreign Exchange Trading Activities.” However, throughout the Class Period, Defendants lacked adequate procedures and safeguards to prevent trader collusion.

101. Defendant traders involved in the sharing of confidential information to predict and manipulate FX exchange rates included high-level employees such as the former global head of FX cash trading at HSBC, the head of HSBC’s FX cash trading operations for Europe, the global head of spot trading at Barclays, the director of emerging markets FX trading at Barclays, the director of emerging markets FX trading at BNP Paribas, the head of European spot FX trading at Citigroup, and the head of FX spot trading at JPMorgan. In several instances where Defendant supervisors were explicitly made aware that employees were sharing confidential customer information, Defendants took no disciplinary action or delayed disciplinary action until several years later, when Defendants’ knowledge of this conduct was revealed to government investigators and the public.

102. The FX traders employed by Defendants are a small, highly interconnected group. Even at the largest banks, FX trading desks are typically staffed with less than ten traders, many of whom have worked previously with their counterparts in other banks.

103. With Defendants’ dominant collective market share, a lack of government regulation, high barriers to entry, institutional incentives for traders to cheat, close social and professional ties among FX traders, and limited non-dealer access to pricing and trade information, the unique characteristics of the FX market make it highly susceptible to collusive

activity. As a former Citigroup trader noted, “[t]his is a market in which price fixing and collusion could actually work.”

II. DEFENDANTS CONSPIRED TO FIX FX PRICES

104. Beginning on or before December 1, 2007, Defendants conspired with one another to fix prices in the FX market on a daily basis. In furtherance of the conspiracy, Defendants manipulated the exchange rates of over two dozen of the most frequently traded currency pairs.

105. Defendants’ conspiracy involved, *inter alia*: (1) the fixing of FX bid-ask spreads; and (2) the fixing of benchmark FX rates, including, but not limited to, the WM/Reuters Fixes and the ECB Fixes.

106. In furtherance of their conspiracy, Defendants: (1) created and participated in chat rooms and other forms of electronic communication; (2) shared confidential client and proprietary trading information with other Defendants involved in the conspiracy; (3) coordinated trades with other Defendants in order to illegally manipulate FX benchmark rates and spot rates; (4) monitored the trades placed by traders employed by co-conspirator Defendants in order to ensure compliance with the conspiracy; and (5) used code names, code words, and deliberate misspellings in efforts to evade detection.

107. As a result of Defendants’ conspiracy, Plaintiffs and the members of the proposed Classes were injured in the form of overcharges on FX Instruments purchased indirectly from one or more Defendants or co-conspirators during the Class Period.

A. Defendants Conspired to Fix Prices and Carried Out the Conspiracy through Electronic Communications

108. Defendants' top-level traders held secret online meetings in chat rooms throughout the Class Period. Plaintiffs are aware of thousands of electronic communications made between traders employed by dozens of banks, including each Defendant, in which traders coordinated trades and exchanged information about orders, spreads, exchange rates, and Fixes.

For example:

- a. Bank of America participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), Australian dollar (AUD), Swiss franc (CHF), and South African rand (ZAR).
- b. Barclays participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), Canadian dollar (CAD), Russian ruble (RUB), and South African rand (ZAR).
- c. BNP Paribas participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), Russian ruble (RUB), Mexican peso (MXN), and Thai baht (THB).
- d. BTMU participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), and Swiss franc (CHF).
- e. Citigroup participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Australian dollar (AUD), New Zealand dollar (NZD), and South African rand (ZAR).
- f. Deutsche Bank participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), the British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), New Zealand dollar (NZD), Canadian dollar (CAD), Russian ruble

(RUB), South African rand (ZAR), Chinese yuan (CNY), Czech koruna (CZK), Hong Kong dollar (HKD), Singapore dollar (SGD), Turkish lira (TRY), Indonesian rupiah (IDR), Indian rupee (INR), and South Korean won (KRW).

g. Goldman Sachs participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), and Australian dollar (AUD).

h. HSBC participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Swiss franc (CHF), Russian ruble (RUB), Mexican peso (MXN), and Thai baht (THB).

i. JPMorgan participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), and Swiss franc (CHF).

j. Credit Suisse participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Australian dollar (AUD), Swiss franc (CHF), Czech koruna (CZK), and South African rand (ZAR).

k. Morgan Stanley participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), and Japanese yen (JPY).

l. RBC participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Australian dollar (AUD), New Zealand dollar (NZD), Canadian dollar (CAD), Swiss franc (CHF), and Japanese yen (JPY).

m. RBS participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), and New Zealand dollar (NZD).

n. SocGen participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Australian dollar (AUD), Polish zloty (PLN), Brazilian real (BRL), Mexican peso (MXN), Chinese yuan (CNY), Israeli shekel (ILS), and Thai baht (THB).

o. Standard Chartered participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), and Brazilian real (BRL).

p. UBS participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), New Zealand dollar (NZD), Canadian dollar (CAD), Chinese yuan (CNY), Singapore dollar (SGD), South Korean won (KRW), and Taiwan dollar (TWD).

109. The secret chat rooms were controlled by Defendants' top-level traders. Defendants referred to chat groups with names such as "The Cartel," "The Bandits' Club," "One Team, One Dream," "the 3 musketeers," "the A-team," "The players," "the Essex Express," and "The Mafia." The "Essex Express" focused on trading Japanese yen and included traders from UBS, Barclays, RBS, and BTMU. "The Mafia" included traders from Citigroup, Credit Suisse, and UBS. "The Cartel" included traders at Barclays, UBS, Citigroup, and JPMorgan.

110. Defendant traders participating in these secret chat rooms shared their "positions"—the amount of a specific currency that they had orders to trade at the Fix—prior to the WM/Reuters Fix and other Fixes. For example, that was uncovered by the Commodities Futures Trading Commission ("CFTC") in its investigation into Defendants' conduct, traders at RBS, HSBC, and an undisclosed third bank shared their positions prior to 4:00 p.m., then congratulated each other on successfully manipulating the rate after the 4:00 p.m. Fix:

Trader	Time	Message
RBS	3:45:35 p.m.	im getting abt 80 quid now...fixing
HSBC	3:45:54 p.m.	my ny 100 quid
RBS	3:51:19 p.m.	getting more than u now [HSBC Trader] betty

HSBC	3:51:26 p.m.	ok thx
Bank W	3:52:23 p.m.	nice job gents
HSBC	3:54:16 p.m.	[RBS Trader], just matched with [Bank 1] and [Bank 2] for 100, still lhs in about 140
RBS	3:54:26 p.m.	Cool
Bank Z	4:00:58 p.m.	i don my hat
Bank W	4:01:08 p.m.	what a job
Bank Z	4:01:23 p.m.	welld one lads
Bank W	4:01:28 p.m.	Bravo
RBS	4:07:03 p.m.	1.6218..nice
HSBC	4:07:33 p.m.	worked ok that one

111. Many of Defendants' FX traders participated in multiple chat rooms, allowing them to communicate with many other Defendants each day. For example, in several transcripts revealed by the CFTC, an HSBC trader participated in four separate chat rooms in the minutes leading up to the 4:00 p.m. Fix. First, the HSBC trader entered a chat room to disclose to traders at Barclays and other banks that he was a seller in "cable" (GBP/USD):

Trader	Time	Message
Barclays 1	2:50:21 p.m.	early days but im a seller cable at fix [. . .]
Bank S	3:11:43 p.m.	here also
Bank R	3:24:50 p.m.	u got much to do in fix [Bank Trader W]
Barclays 1	3:25:07 p.m.	im seller 130 cable that it [. . .]
Barclay 1	3:28:02 p.m.	hopefulyl a fe wmore get same way and we can team whack it
Bank R	3:28:17 p.m.	ill do some digging [. . .]
Barclays 1	3:36:13 p.m.	im seller 170 gbp atmofix
Bank R	3:36:26 p.m.	we sellers of 40
HSBC	3:38:26 p.m.	lhs in cable at the fix
HSBC	3:38:29 p.m.	good amount [. . .]

As the 4 p.m. Fix period closed, the participants in the chat room congratulated each other:

Bank R	4:00:35 p.m.	well done gents
Barclays 1	4:01:56 p.m.	hooray nice team work
HSBC	4:02:22 p.m.	nice one mate

Prior to the Fix that same day, the HSBC trader participated in a separate chat room and conveyed the information he had learned in the first room to another Barclays trader:

Trader	Time	Message
HSBC	3:25:19 p.m.	get lumpy cable at the fix ok
Barclays 2	3:25:32 p.m.	ta mate
Barclays 2	3:25:35 p.m.	150 here
HSBC	3:25:46 p.m.	400 odd here
HSBC	3:25:50 p.m.	lets go
Barclays 2	3:26:00 p.m.	yeah baby
HSBC	3:26:03 p.m.	[Barclays Trader 1] is too [. . .]
Barclays 2	3:27:00 p.m.	sry thats the [Barclays] flow
Barclays 2	3:27:23 p.m.	[Barclays Trader 1] gets
HSBC	3:28:26 p.m.	so its 150 all day wiht you guys? [. . .]
Barclays 2	3:36:34 p.m.	170 here

As the 4 p.m. Fix period closed, the traders celebrated:

Trader	Time	Message
Barclays 2	4:01:03 p.m.	nice job mate
HSBC	4:03:34 p.m.	haha
HSBC	4:03:40 p.m.	i sold a lot up there
HSBC	4:03:46 p.m.	and over sold by 100
HSBC	4:03:48 p.m.	hahaha [. . .]
Barclays 2	4:04:06 p.m.	sweet nice job [. . .]
Bank W 2	4:05:04 p.m.	bravo

At the same time, the HSBC trader disclosed that he was selling at the Fix in yet another private chat with a trader at an unknown bank prior to the close of the Fix period:

Trader	Time	Message
HSBC	3:28:45 p.m.	Ihs in about 300 quid cable for the fix
Bank V	3:28:54 p.m.	sweet
HSBC	3:29:42 p.m.	can you do some digging and seeif anyoine is that way
Bank V	3:29:52 p.m.	ofcourse mate
Bank V	3:34:49 p.m.	im getting 83 at mom mate
HSBC	3:34:56 p.m.	nice [. . .]
Bank V	3:37:38 p.m.	someone tells a guy here he is getting 170 cble at fix
Bank V	3:43:28 p.m.	see that [Bank U Trader]
HSBC	3:43:57 p.m.	thx

As the 4 p.m. Fix period ended, the traders continued:

Trader	Time	Message
Bank V	4:00:51 p.m.	have that my son
Bank V	4:00:52 p.m.	hahga
Bank V	4:00:56 p.m.	v nice mate

HSBC	4:04:53 p.m.	that worked nice mate
Bank V	4:05:44 p.m.	big time mate.

In a fourth chat room, the HSBC trader disclosed his position to traders at Barclays and other banks prior to the close of the Fix period. The traders shared information about the size and direction of the net orders at the Fix period:

Trader	Time	Message
Barclays 2	3:36:18 p.m.	see first seller now
Bank Z	3:36:48 p.m.	you gettingt betty3 on the mumble still [Barclays Trader 2] ?
Bank Z	3:36:51 p.m.	we have nowt
Barclays 2	3:36:56 p.m.	yep
Barclays 2	3:36:59 p.m.	170
Bank Z	3:37:05 p.m.	ta
Bank Z	3:37:21 p.m.	get it up to 60/70 then bash the fck out of it
HSBC	3:38:26 p.m.	lhs in cable at the fix
HSBC	3:38:29 p.m.	good amount
Bank Z	3:38:35 p.m.	ta [...]
Bank Z	4:00:28 p.m.	nice work gents

By participating in multiple chat rooms and sharing information, Defendants were able to amplify their influence on the FX market and successfully manipulate FX rates.

112. Defendants' traders that were involved in the conspiracy actively monitored the activity of other co-conspirator traders in order to ensure compliance. Traders that failed to comply with the conspiracy were threatened with punishment by other Defendant traders.

113. Only a select group of traders were allowed into the secret groups, and traders were highly protective of their membership. In a December 2011 chat room conversation uncovered by the CFTC, three Defendant traders discuss inviting another trader from Barclays into their chat group, called the "Cartel":

Trader	Time	Message
Matt Gardiner (UBS)	7:49:55 p.m.	are we ok with keeping this as is . . .
	7:50:27 p.m.	ie the info & risk sharing?
Rohan Ramchandani (Citigroup)	7:50:27 p.m.	Well . . .
Matt Gardiner (UBS)	7:50:30 p.m.	that is the qu[estion]

Rohan Ramchandani (Citigroup)	7:50:32 p.m.	you know him best obv . . .
	7:50:39 p.m.	if you think we need to adjust it
	7:50:43 p.m.	then he shouldn't be in chat
Richard Usher (JPMorgan)	7:50:54 p.m.	yeah that is key
	7:51:00 p.m.	simple question . . .
	7:51:08 p.m.	I trust you implicitly . . .
	7:51:13 p.m.	and your judgement
	7:51:16 p.m.	you know him
	7:51:21 p.m.	will he tell rest of desk stuff
	7:51:26 p.m.	or god forbid his nyk [New York office]
Rohan Ramchandani (Citigroup)	7:51:46 p.m.	yes
	7:51:51 p.m.	that's really imp[ortant] qu[estion]
	7:52:01 p.m.	don't want other nuptys in mkt to know
	7:52:17 p.m.	but not only that
	7:52:21 p.m.	is he gonna protect us
	7:52:33 p.m.	like we protect each other against our own branches
	7:52:46 p.m.	ie if you guys are rhs [right hand side, a code for buying the first currency listed in a currency pair] and my nyk is lhs [left hand side] . . . ill say my nick [New York office] lhs in few
Matt Gardiner (UBS)	7:53:52 p.m.	what concerns me is that i know he'll never tell us when at risk

After further discussion about whether the Barclays trader would “add huge value to this cartel,” the three traders agreed to invite the Barclays trader into the chat room for a “1 month trial,” although Citigroup trader Rohan Ramchandani warned the Barclays trader, “mess this up and sleep with one eye open at night.”

114. Defendants’ traders used the chat rooms to coordinate their trades in order to move exchange rates in directions that favored Defendants, to the detriment of non-conspirator market participants. Defendants used code names and words in the chat rooms in efforts to evade detection by governmental authorities. For example, one message uncovered by regulators from a chat room involving traders from HSBC and Barclays said: “You getting betty on the mumble still? We have nowt . . . Get it up to 60/70 then bash the fck out of it.” “Betty” in the message is a reference to Betty Grable, and Grable rhymes with cable – the term for USD/GBP

trades. Traders in chat rooms also used nicknames to refer to each other. For example, in the chat group known to members as the “Cartel,” former RBS and JPMorgan trader Richard Usher was referred to as “Feston” because he resembled an overweight version of British chef Heston Blumenthal; Citigroup Rohan Ramchandani trader was called “Ruggy,” and Barclays trader Chris Ashton was dubbed “Robocop.”

B. Defendants Conspired to Fix Bid-Ask Spreads

115. Beginning at least as early as December 1, 2007, as part of their conspiracy to fix prices in the FX market, Defendants conspired to fix the bid-ask spreads paid by customers for various currency pairs. As alleged above, there are thousands of electronic communications between traders at two or more Defendant banks discussing FX bid-ask spreads and colluding to manipulate FX rates.

116. Defendants quote bid-ask spreads directly to customers on demand throughout the trading day.

117. Through electronic communications, traders employed by Defendants and their co-conspirators exchanged information about bid-ask spreads and customer orders, and coordinated quotes and orders between banks. For example, in a November 4, 2010 chat, a Barclays trader discussed manipulating the USD/South African Rand rate with a JPMorgan trader, stating, “if you win this we should coordinate you can show a real low one and will still mark it little lower haha.” The JPMorgan trader acknowledged the illegality of their scheme, suggesting that they “prolly shudnt put this on perma chat.” The Barclays trader responded, “if this is the chat that puts me over the edge than oh well. much worse out there.” Weeks later, on November 17, 2010, the same Barclays trader entered a chat room and told traders at other banks to “show them way to the left . . . if they come here I will show them little worse . . . you win . . . and get them cheap.” Months later, in a chat room on February 25, 2011, the same Barclays

trader coordinated with a trader at Standard Chartered to fix bid-ask spreads. The Standard Chartered FX trader asked “what bid you want me to show if somwone calls” and the Barclays trader responded “up to 02.” The Standard Chartered trader replied, “okok” and “ill let you know if we get asked.” Later that year, on June 10, 2011, the Barclays trader showed up in another chat room to tell other traders that “we trying to manipulate it a bit more in ny now . . . a coupld buddies of mine and I.”

118. Bid-ask spreads are a primary source of revenue for FX dealers, and in a competitive FX market, absent collusion, a profit-maximizing dealer would seek to gain customers and market share by beating the spreads offered by competitor dealers. On the other hand, a decision to increase bid-ask spreads would result in a loss of customers to dealers with more advantageous quotes. Customers want narrower spreads, allowing them to buy currency at lower prices and sell currency at higher prices. Only through coordinated price fixing could an FX dealer quote less desirable bid-ask spreads without losing market share.

C. Defendants’ Conspiracy to Fix the Benchmark Rates

119. Beginning at least as early as December 1, 2007, Defendants conspired to manipulate the Fixes.

120. Defendants’ traders carried out their conspiracy by communicating via chat rooms, instant messages, and email. Through these communications, Defendants regularly shared confidential pricing and order information before the Fixes. Armed with this shared confidential information, Defendants executed coordinated trading strategies designed to manipulate the Fixes.

121. Defendants’ conspiracy was successful in manipulating the Fixes, allowing Defendants to earn supracompetitive profits to the detriment of non-conspirator traders, including Plaintiffs and members of the proposed Classes.

1. Defendants Shared Proprietary Trade Data In Order To Manipulate FX Benchmark Rates

122. Defendants regularly shared confidential customer trade data with traders employed at other Defendant dealers. Each Defendant compiled trade order data to determine the amount of currency that it needed to buy or sell at the Fixes. Defendants then shared that data with other Defendants through secret electronic communications, enabling each Defendant to predict and influence the movement of FX prices during and around the times of the Fixes.

123. Defendants' sharing of information allowed their traders to predict how the market would move around the times of the Fixes much more accurately than they could without the sharing of proprietary information.

124. The sharing of confidential customer FX information violates the Federal Reserve Bank of New York's "Guidelines for Foreign Exchange Trading Activities." Specifically, the Guidelines provide:

Confidentiality and customer anonymity are essential to the operation of a professional foreign exchange market. Market participants and their customers expect that their interests and activity will be known only by the other party to the transaction . . . and an intermediary, if one is used. It is inappropriate to disclose, or to request others to disclose, proprietary information relating to a customer's involvement in a transaction except to the extent required by law or upon the request of the appropriate regulatory body.

* * *

Staff should not pass on confidential and nonpublic information outside of their institution. Such information includes discussions with unrelated parties concerning their trades, their trading positions, or the firm's position. It is also inappropriate to disclose, or to request others to disclose, information relating to a counterparty's involvement in a transaction except to the extent required by law. Institutions should develop policies and procedures governing the internal distribution of confidential information. Trading room staff should take special precautions to avoid situations involving or appearing to involve trading on nonpublic information.

125. Rather than taking precautions to prevent the sharing of nonpublic information, as required by the Federal Reserve Guidelines, Defendants actively shared information about customers, transactions, pending orders, and other nonpublic data.

2. Methods of Manipulating Benchmark Rates

126. Defendants employed a number of strategies in collusively manipulating the Fixes. Defendants had various nicknames for these strategies, including “trading ahead,” “front-running,” “banging the close,” “painting the screen,” “netting off,” “building,” “giving the ammo,” “taking the ammo,” “taking out the filth,” and “clearing the decks.”

127. All of these strategies were accomplished by Defendants sharing confidential customer trade information with one another in order to gain anticompetitive advantage in the FX market and increase their chances of profiting from trades placed at the Fixes.

128. Defendants’ traders engaged in a market manipulation strategy called “trading ahead” when their shared customer trade order data indicated that trades placed at and around the Fix would move FX rates in a particular direction. If the trade data indicates that trades placed around the Fix will cause a particular currency to rise in value, privy traders would order that currency in advance of the Fix, and/or sell after the Fix, and profit from the gains.

129. Entities that purchase FX directly from Defendants often place substantial FX orders at the Fixes hours before the Fixes are actually set. Sharing information about these upcoming trades allowed Defendants to predict the direction that the market would move for certain currencies.

130. Absent collusion, no single Defendant would have had sufficient trade data to profitably predict the movement of the market around the times of the Fixes. Although Defendants collectively dominated the market, no Defendant had sufficient market share to consistently and accurately project the direction of the market based solely on its own customer orders.

131. In order to avoid the risk of incorrectly guessing the direction of the market leading up to and after the Fix, Defendants regularly agreed through secret communications to

collectively “front run” or “trade ahead,” working together to sequence their customers’ orders in order to push FX rates in a certain direction, then buying or selling the manipulated FX for a profit. Defendants employed this strategy to manipulate the WM/Reuters Fixes and the ECB Fixes.

132. In one detailed example of “front running” trader manipulation uncovered by the United Kingdom Financial Conduct Authority (“FCA”), an HSBC trader coordinated with co-conspirators at Barclays and other banks to manipulate the 4:00 p.m. Fix for GBP/USD by placing multiple smaller trades leading up to the Fix, then placing large trades at the Fix to take advantage of the manipulated rate. At around 3:30 p.m., the HSBC trader entered a chat room and told traders “Let’s go.” A trader at another bank replied “yeah baby,” then “hopefuulyl a fe wmore get same way and we can team whack it.” A third trader encouraged the second trader to “bask the fck out of it.” The first trader informed the HSBC trader that he had a deal with another bank, which was buying: “Taken him out . . . so shud have iot rid of main buyer for u . . . im stilla seller of 90 . . . gives us a chance.” HSBC ended up selling £70 million between 3:32 p.m. and the start of the Fix period. Those early trades were designed to take advantage of the expected downwards movement in the Fix rate following the discussions within the chat room. In that time period, the GBP/USD rate fell from \$1.6044 to \$1.6009. The HSBC trader then sold £311 million during the Fix period. HSBC, Barclays, and the two other banks involved in the chat room accounted for 63 percent of the volume of sales on the Reuters electronic trading platform that day. The 4:00 p.m. Fix price was \$1.6003, and HSBC’s profit in this trade was \$162,000. After the Fix, the four traders congratulated each other on a successful manipulation, chatting: “Nice work gent . . . I don my hat,” “dont mess with our ccy [currency],”

“loved that mate . . . worked lovely . . . pity we coldn’t get it below the 00 [below \$1.6000],” and “we need a few more of those for me to get back on track this month.”

133. In another example of “front running” uncovered by the CFTC, traders from Barclays and HSBC discussed unloading positions just prior to the WM/Reuters Fix period, commencing at 3:54 p.m.:

Trader	Time	Message
Barclays	3:54:32 p.m.	can u let me know when are down to your last tenner
HSBC	3:55:02 p.m.	ok
HSBC	3:55:10 p.m.	i’m down to my last tenner
Barclays	3:55:17 p.m.	ok ta
Barclays	3:55:41 p.m.	just sold some more
HSBC	3:55:49 p.m.	hahaha
Barclays	3:55:51 p.m.	hehehe
Barclays	4:00:57 p.m.	nice on[e] son
HSBC	4:03:15 p.m.	learnt from a good fella
Barclays	4:15:43 p.m.	there u go
Barclays	4:16:48 p.m.	go early, move it, hold it, push it

134. In another example of “front running,” traders at JPMorgan and an undisclosed co-conspirator bank agreed to “join forces” and “double team” euro trades prior to the Fix:

Trader	Time	Message
Bank W	3:46:53 p.m.	i’d prefer we join forces
JPMorgan	3:46:56 p.m.	perfick 3:46:59 lets do this
JPMorgan	3:47:11 p.m.	lets double team them
Bank W	3:47:12 p.m.	YESssssssssssss

By the 4:00 p.m. Fix, JPMorgan had built orders of €278 million, while the other trader’s orders totaled €240 million. JPMorgan bought €7 million in the two minutes before the Fix window, attempting to take advantage of the expected upwards movement in the Fix rate following the discussions within the chat room. During the Fix calculation period, JPMorgan bought €134 million and the other trader bought €125 million. Between the two banks, they accounted for 41 percent of all EUR/USD trading at the Fix. JPMorgan’s profit in this trade was \$33,000. Shortly after the fixing window, the traders congratulated themselves:

Trader	Time (U.S. Eastern)	Message
Bank W	4:03:25 p.m.	sml rumour we haven't lost it
JPMorgan	4:03:45 p.m.	we
JPMorgan	4:03:46 p.m.	do
JPMorgan	4:03:48 p.m.	dollarrr

135. Defendants also engaged in a market manipulation strategy that they referred to as “banging the close.” “Banging the close” refers to traders breaking large FX orders into multiple smaller trades, in order to artificially inflate the Fixes.

136. Because the WM/Reuters Fixes were based on the median of spot rates for trades placed during the calculation window, but the volume of each trade was not taken into account, the WM/Reuters Fixes were particularly vulnerable to collusive manipulation by Defendants. By splitting large trades into multiple smaller trades, Defendant traders working in conjunction could manipulate the median exchange rates of trades made during the WM/Reuters calculation window, thereby manipulating the WM/Reuters Fix.

137. Defendants also employed these strategies, including “front running” and “banging the close,” to manipulate the ECB Fixes.

138. In one example of “banging the close” in a chat room transcript uncovered by the FCA, Citigroup had net buy orders of €200 million and stood to benefit if it was able to move the ECB Fix rate upwards. The Citigroup traders were able to “build” this order by gathering information about euro orders from other co-conspirator banks. Traders at the other banks agreed to transfer their buy orders to Citigroup, and with these additional trades, Citigroup traders accumulated €542 million in total buy orders. In the 15 seconds before the ECB fix, Citigroup placed four buy orders of increasing size and price, which were priced at a level above the prevailing offer price. According to the FCA, Citigroup’s trading in this case generated a profit of \$99,000.

139. The converse of “banging the close” was called “clearing the decks.” By combining small trades into a lesser number of large trades, Defendant traders could manipulate the WM/Reuters and ECB Fixes by artificially decreasing the number of trades placed during the calculation windows for the Fixes, thereby manipulating the median exchange rates of trades made during those windows.

140. The FCA uncovered a specific example of an RBS trader working with other banks to manipulate the WM/Reuters GBP/USD Fix by “clearing the decks” on a day when the RBS trader had net client sell orders at the Fix and would benefit if it was able to manipulate the 4:00 p.m. Fix rate lower. In advance of the Fix, the RBS trader shared information about its Fix orders with other traders in a chat room, and the traders worked to combine, or “net off,” their trades by transferring their trades to other dealer banks and combining them into larger trades. In a separate chat room, RBS told three other traders: “We getting a lot Betty at fix” referring to GBP/USD. In the period leading up to the 4:00 p.m. Fix, RBS built up £399 million to sell at the Fix, which was designed to take advantage of the expected downward movement in the Fix rate following the discussions within the chat room. RBS made \$615,000 in profit on this trade.

141. In another “clearing the decks” example, traders at RBS and other banks agreed to share “ammo” and combine their small trades into one large trade to manipulate the Australian dollar and New Zealand dollar:

Trader	Time	Message
Bank T Trader	3:43:32 p.m.	buying aud and nzd at the fix
RBS Trader	3:43:43 p.m.	Tkx
Bank T Trader	3:43:52 p.m.	ntg big
RBS Trader	3:43:59 p.m.	Im buying 50 aud can do yours if you want
Bank T Trader	3:45:13 p.m.	ok . . . 60 plse . . . ****
RBS Trader	3:45:56 p.m.	Great
Bank P Trader	3:50:00 p.m.	I need to buy 25 aud at the fix too.. any int? more ammo for you...?
RBS Trader	3:50:21 p.m.	Sure [Bank P Trader]

Trader	Time	Message
Bank P Trader	3:51:24 p.m.	cool all yours [RBS Trader]
RBS Trader	3:51:46 p.m.	Buying 220 now
Bank P Trader	3:51:57 p.m.	good luck
Bank T Trader	3:52:20 p.m.	load up your 50 offrs . . .
Bank P Trader	3:53:14 p.m.	ill do those ones if you want
RBS Trader	3:53:19 p.m.	haah
Bank T Trader	3:53:20 p.m.	ur fkg [RBS Trader], ramp it
Bank T Trader	4:00:41 p.m.	nice one *****
Bank P Trader	4:00:56 p.m.	look at you! . . . well done mate . . .

142. Defendants also manipulated the WM/Reuters Fixes by placing phony orders with one another during the WM/Reuters calculation window.

D. Other Conduct in Furtherance of the Conspiracy

143. In addition to fixing bid-ask spreads and the WM/Reuters and ECB Fixes, Defendants engaged in other illegal conduct in furtherance of the conspiracy by manipulating limit orders and triggering stop-loss orders.

144. A stop-loss order is an order placed with instructions to buy or sell FX once the currency reaches a certain price. A stop-loss order is designed to limit an investor's loss on a currency position by allowing the investor to expressly limit their loss to a certain amount.

145. When a customer places a stop-loss order to buy FX, the dealer can profit if it purchases the currency for a rate less than the price at which the customer has agreed to pay. If a customer places a stop-loss order to sell, the dealer can profit if it sells the FX for a higher average rate than the rate at which it buys the FX from the customer.

146. Defendants frequently colluded to manipulate FX Fixes in order to move the rates towards levels that would trigger stop-loss orders and force customers to buy or sell.

III. DEFENDANTS' CONSPIRACY IMPACTED INDIRECT PURCHASES OF FX INSTRUMENTS

147. Defendants' collusive manipulation of FX spot prices and benchmark rates significantly impacted prices throughout the market for FX Instruments, including prices for spot FX Instruments paid by Plaintiffs and members of the proposed Classes.

148. Plaintiffs and members of the proposed Classes purchased FX Instruments directly from RFEDs that are members of the Direct Settlement Class in *FOREX*, in transactions where the RFEDs purchased those FX Instruments directly from one or more Defendants or co-conspirators. Because members of the Direct Settlement Class are allowed to recover overcharge damages regardless of whether they passed on those overcharges to their customers (under the *Illinois Brick* "direct purchaser rule" for federal antitrust claims), Plaintiffs and members of the proposed Classes bring this action under state *Illinois Brick* repealer statutes and related state consumer protection statutes to recover the overcharge damages that were directly passed on to them by members of the Direct Settlement Class. Analyses performed by Plaintiffs' expert confirm that the manipulated and supracompetitive overcharge that the RFED members of the Direct Settlement Class paid to Defendants for FX Instruments was passed on to Plaintiffs and members of the proposed Classes, and that there is no other person or entity that exists in the causal chain between the RFEDs and Plaintiffs and members of the proposed Classes.

149. Some entities, such as RFEDs, trade FX Instruments directly with dealer banks, such as Defendants, to resell those FX Instruments to indirect purchaser customers (often referred to as "retail customers") such as Plaintiffs and members of the proposed Classes. Retail FX customers trade FX Instruments with RFEDs for a variety of purposes, including long and short-term investing, portfolio diversification, and to hedge their foreign investments against risks of foreign currency fluctuations.

150. Members of the Classes proposed here, including all named Plaintiffs purchased FX Instruments indirectly from Defendants and Defendants' co-conspirators by purchasing FX Instruments from RFEDs that purchased them from Defendants and their co-conspirators.

151. As direct purchasers of FX Instruments from Defendants and Defendants' co-conspirators, RFEDs are members of the Direct Settlement Class.

152. The dealer banks, such as Defendants, that sell FX Instruments to RFEDs for resale to indirect purchaser customers, such as Plaintiffs, are often referred to as "liquidity providers." The liquidity providers, many of which are Defendants, provide real-time quotes to the RFEDs, and the RFEDs use those quotes to set the price paid by Plaintiffs as retail FX customers, to whom Defendants' illegal overcharge is passed on.

153. Numerous Defendants were liquidity providers for RFEDs both during the Class Period and today. Those liquidity provider relationships are actively promoted to Plaintiffs and the Class members by the RFEDs. For example:

- FOREX.com's liquidity providers include Defendants JPMorgan, UBS, and Citigroup;⁶
- FXCM's liquidity providers include Defendants Barclays, Citigroup, Deutsche Bank, UBS, and Morgan Stanley;⁷ and
- OANDA's liquidity providers include Barclays, Bank of America, BTMU, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, RBS, SocGen, Standard Chartered, and UBS.⁸

⁶ *FDM Public Disclosures*, <https://www.forex.com/~/media/forex/files/terms-and-conditions/us/fdm-disclosure-01252018.pdf> (last accessed Apr. 5, 2018).

⁷ *FXCM Liquidity Providers*, <https://www.fxcm.com/uk/about-fxcm/liquidity-providers/> (last accessed Apr. 5, 2018).

⁸ *Regulatory Public Disclosures*, <https://www.oanda.com/resources/legal/united-states/legal/regulatory-public-disclosures> (last accessed Apr. 5, 2018).

154. RFED purchases account for a significant portion of Defendants' FX business; therefore, Defendants were clearly aware that the Conspiracy would injure RFED customers including Plaintiffs and members of the Classes.

155. The RFEDs with whom Plaintiffs transacted employed a straightforward pricing model in which the RFED purchased the FX Instrument from a liquidity provider (Defendant) and resold that same FX Instrument to the retail customer (Plaintiff) for a price that is equal to the amount that the RFED paid to the Defendant, plus a retail markup. Therefore, the RFEDs' pricing model mathematically incorporates the price at which the RFEDs purchases the spot FX Instrument from a Defendant into the price at which the RFED sells the spot FX Instrument to the retail FX customer Class member.

156. Under that model, the RFED received real-time bid-ask quotes from several dealer bank "liquidity providers," most of which are Defendants.

157. The chain of causation from Defendant-induced FX price distortions to retail FX prices is direct, strong, and inevitable. The bid and ask prices offered by RFEDs to their retail FX customers (including Plaintiffs and members of the Classes) are set by a computer algorithm and move one-for-one with the prices quoted by dealer banks (including Defendants and their co-conspirators). As alleged herein, those dealer prices were illegally manipulated by the Conspiracy throughout the Class Period.

158. An RFED determines the bid and ask prices offered to their retail FX customers using a computer algorithm that takes in bid/ask quotes from liquidity providers (including Defendants), selects the best bid and ask prices from those quotes, and calculates prices for retail FX customers (such as Plaintiffs and members of the Classes) by taking those best-available

liquidity provider quotes and adding (for the ask) or subtracting (for the bid) a spread (the “retail spread” or “markup spread”) to those bid and ask quotes, i.e., the RFEDs’ retail markup.

159. When retail FX customers, such as Plaintiffs, purchase an FX Instrument from a Direct Settlement Class member, such as an RFED, where the RFED is their counterparty for purposes of the transaction, no other person or entity stands between the retail FX customer, such as Plaintiffs, and the RFED. For each retail FX Instrument purchase, for which Plaintiffs alleges damages, there is a principal-to-principal transaction between the retail FX customer (Plaintiff) and the RFED, and a matching principal-to-principal transaction between the RFED and the liquidity provider-Defendant.

160. An RFED’s computer algorithm sets the bid and ask prices in three steps which, as alleged below based on statistical analyses performed by Plaintiffs’ expert, results in a nearly perfect correlation between (a) the price paid for the manipulated FX Instrument by an RFED-Direct Settlement Class Member to a liquidity provider-Defendant that is then passed on to Plaintiffs and the proposed Classes, as follows:

Step 1: The RFED receives live electronic bid and ask quotes from its Defendant liquidity providers.

Step 2: The RFED’s algorithm compares the Defendant liquidity providers’ quotes and selects the best bid and ask prices, *i.e.* the prices with the narrowest spread.

Step 3: The RFED’s algorithm sets prices for retail FX customers by taking the best bid and ask prices available from the Defendant liquidity providers and adding to (for the ask) or subtracting from (for the bid) a “markup spread.” Those retail prices are posted on the RFED’s website and updated in real time. When a retail FX customer purchases an FX Instrument from the RFED, they pay the price that is quoted on the RFED’s website at the moment the transaction is executed.

161. When retail FX customers, such as Plaintiffs, purchase an FX Instrument from an RFED, two matching transactions are concurrently executed: (1) the RFED purchases the FX Instrument from the liquidity provider, such as Defendants, paying the best “Ask” price quoted

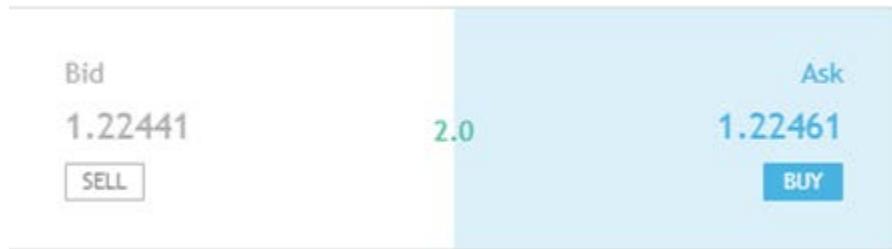
by the liquidity provider at the time of purchase, and (2) the retail FX customer purchases the FX Instrument from the RFED, paying that exact same price, plus an additional retail spread charged by the RFED. The entire liquidity provider (Defendant) to RFED (Direct Settlement Class Member) to retail FX customer (Plaintiff) transaction takes less than a second to complete. Both steps are counterparty-to-counterparty transactions; therefore, the RFED is the direct purchaser and the Class member is the indirect purchaser with no intervening individuals or entities between the RFED-Direct Settlement Class Member and retail FX customer-Plaintiff.

162. Depending on the RFED, the amount of the markup may be fixed based on the currency pair, or it may be calculated as a multiple of the best bid-ask spread quotes that the RFED receives from its liquidity providers. But for all RFEDs, the FX Instrument price paid by the retail FX customer is equal to the price that the RFED paid to purchase the FX Instrument from the liquidity provider, plus the retail spread charged by the RFED. This straightforward mathematical relationship means that any anticompetitive overcharge incurred in a Defendant-to-RFED transaction is necessarily passed on to the Plaintiff or Class member retail purchaser in the matching RFED-to-Class member transaction.

163. Each RFED's algorithm works continuously (in essence, 24 hours a day, 7 days a week). Because dealer prices change at high frequencies, RFED prices also change very frequently: indeed, on FOREX.com, FXCM, and OANDA—where prices are posted publicly in real time—prices often change many times per second.

164. For example, in Figure 1, where a customer of FOREX.com wants to purchase 100 euros (EUR 100) with U.S. dollars (USD) and FOREX.com is quoting the following bid and ask prices:⁹

Figure 1: Illustrative EUR/USD retail FX prices taken from FOREX.com.



165. In this example, the “Bid” price of 1.22441 is the number of USD that FOREX.com is willing to pay to buy one EUR, or equivalently the price at which a retail FX customer can sell one EUR to FOREX.com. The “Ask” price of 1.22461 is the number of USD that FOREX.com is willing to accept in exchange for one EUR, or equivalently the price at which a retail customer can buy one EUR from FOREX.com. The retail bid-ask spread (or “retail spread”) quoted by FOREX.com is 0.0002 or 2.0 “pips.” The retail market mid-quote (i.e. the average of the bid and the ask) at this moment, 1.22451, would be essentially the same as the dealer bank mid-quote, as shown by the statistical analysis described below. The dealer bank bid-ask spread would normally be smaller than the retail spread; with a dealer bank spread of 1 pip, the dealer bank bid and ask would be 1.22446 and 1.22456. Throughout the Class Period, all RFEDs that Plaintiffs and the Class members transacted with—including the other two largest U.S. RFEDs, FXCM and OANDA—employed the same straightforward pricing model as the FOREX.com model, as alleged herein. To the extent that those RFEDs sold FX Instruments to other customers using pricing models that did not follow the Defendant-to-RFED-to-Class

⁹ These FOREX.com images are screenshots from FOREX.com’s online trading platform. *See* <https://webtrading.forex.com> (last accessed Mar. 20, 2018).

member model described herein, those customers are excluded from the proposed Classes, which limit Class membership to persons who purchased FX Instruments that followed that model. Additionally, because the Classes proposed here are limited to persons who purchased an FX Instrument from a Direct Settlement Class member where that Direct Settlement Class member purchased the FX Instrument from a Defendant or co-conspirator, with respect to RFED transactions, Plaintiffs are only seeking damages where the RFED's liquidity provider was a Defendant or co-conspirator.

166. The amount of the RFED markup on a purchase of an FX Instrument can be determined by subtracting the amount paid by the RFED to its liquidity provider from the amount paid by the retail customer to the RFED. For instance, if the price paid by the RFED to the liquidity provider in the above example was 1.22451, and the customer paid the "Ask" price of 1.22461, the retail markup is 0.00010, or 1 pip.

167. As described above, the Conspiracy directly affected the prices charged by Defendants for spot FX Instruments sold to direct purchasers including RFEDs, meaning the prices set on the electronic platforms for spot FX Instruments where Defendants and other dealer banks trade. Those dealer bank spot FX prices were used by RFEDs to set retail spot FX prices. Therefore, the distortions in dealer prices due to the Conspiracy were passed through one-for-one to RFED prices.

168. Consider a scenario in which the dealer mid-quote (the average of the bid and ask prices) for EUR/USD rises from \$1.2000/€ to \$1.2005/€ a rise of 5 pips, where that price increase is due to Defendants' manipulation as part of the Conspiracy. Suppose also that the dealer and spread is 1 pip and the retail spread is 2 pips. So the retail bid/ask begins at 1.19990/1.20010 (a spread of 2 pips), and the dealer bid/ask begins at 1.19995/1.20005 (a spread

of 1 pip). When the dealer bid-ask rises 5 pips, the algorithm used to determine retail bid-ask prices automatically incorporates that increase. So the dealer bank bid/ask moves to 1.20045/1.20055, and in turn, the retail bid/ask moves to 1.20040/1.20060. Defendants' price manipulation causes the dealer bank price to increase by 5 pips, and the retail price increases by the exact same amount. If a retail FX customer purchases an FX Instrument from an RFED immediately after the 5-pip increase, the RFED purchases the FX Instrument from a dealer-Defendant at the dealer-Defendant ask price of 1.20055, which is 5 pips higher than the price would have been but-for the anticompetitive price increase, and the RFED's retail FX customer purchases the FX Instrument from the RFED at the retail ask price of 1.20060, which is also 5 pips higher than the price would have been but-for the Conspiracy. Accordingly, the entire amount of the anticompetitive overcharge incurred in the dealer Defendant-to-RFED transaction is passed on to the retail FX customer-Plaintiff in the matching RFED-to-retail customer transaction. In this example, the retail FX customer's damages incurred due to the Conspiracy is equal to 5 pips multiplied by the number of units that the customer purchased.

169. The above example demonstrates how any anticompetitive overcharge incurred by the RFED is necessarily passed on to the retail FX customer. In every transaction where a Defendant sold an FX Instrument to an RFED and the RFED in turn sold that FX Instrument to a Class member, the price paid by the RFED is fully incorporated into the price paid by the Class member. Therefore, any anticompetitive overcharge contained in the price paid by the RFED to the Defendant is directly passed on by the RFED to the Class member. Because any overcharges paid by the RFED to the Defendant are passed on to the retail FX customer, such as Plaintiffs, it is impossible for the RFED to "absorb" any anticompetitive overcharge caused by the Conspiracy.

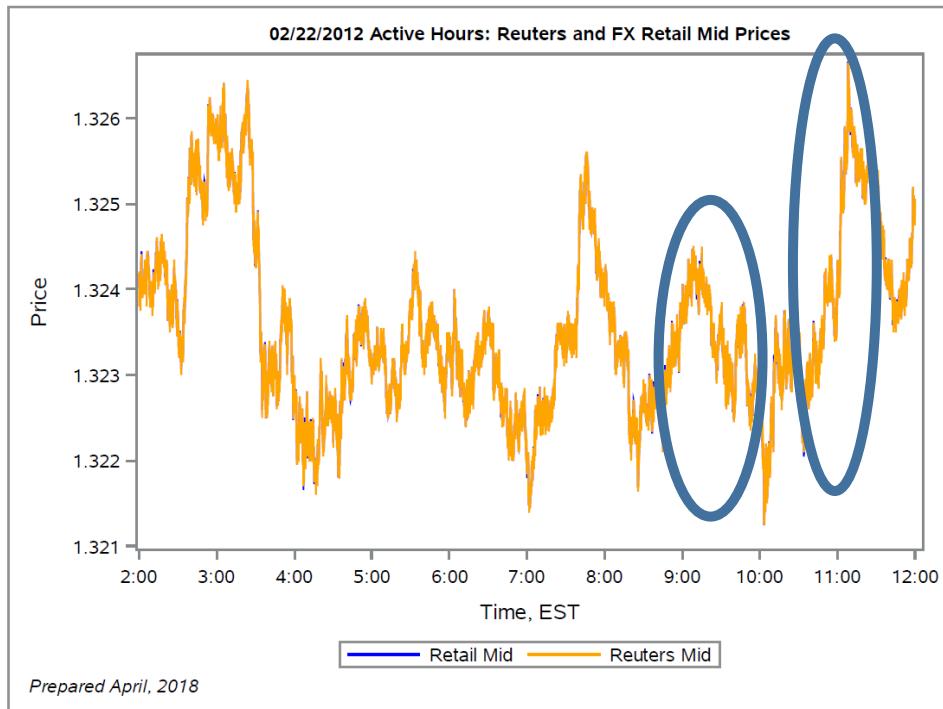
170. Because the prices charged by RFEDs are determined based on the prices charged by Defendants, RFED pricing should be highly correlated with Defendants' pricing for spot FX Instruments. Plaintiffs' expert performed an economic analysis utilizing actual pricing data during the Class period, as described below, which confirms that, in fact, that correlation exists to near statistical perfection.

171. By way of example, to demonstrate the actual extent of that correlation, Plaintiffs' expert prepared the figures and analyses described below comparing the EUR/USD spot FX Instrument prices from FOREX.com (currently the world's largest RFED) with the EUR/USD spot FX Instrument prices from the "Reuters Tick History" database for February 2012. The FOREX.com data is comprised of actual bid/ask quotes that were posted on FOREX.com and made available to retail FX customers including Plaintiffs and members of the proposed Classes during the Class Period. The Reuters data is comprised of the best-available quotes from the major dealer bank trading platforms—including EBS, Reuters Matching, Reuters Dealing, and others—updated at high frequencies. Because Defendants collectively dominate more than 90% of the FX dealer market, a substantial portion of those quotes are direct quotes from Defendants.

172. The analyses conducted by Plaintiffs' expert confirm that the spot FX Instrument prices charged by Defendants to RFED Direct Settlement Class members (which were manipulated due to the Conspiracy) are nearly perfectly correlated with the prices at which Plaintiffs purchased those same FX Instruments from the RFEDs. For example, the comparisons below focus on pricing data from FOREX.com during its most active hours, which roughly coincide with London business hours, during February 2012, which falls within the Class Period.

173. A comparison of FOREX.com's pricing with the Reuters pricing shows that the two price series are highly correlated. For example, Figure 2 shows both retail FX prices (FOREX.com) and Reuters prices during active trading hours of February 22, 2012. The two prices move so closely together that the viewer typically cannot see both series. In Figures 2 and 3 below, the retail (i.e., RFED) price is represented by a blue line and the Reuters (i.e., dealer banks including Defendants) price is represented by a gold line. The two prices are so nearly perfectly correlated for the entire period that in just a few instances does the blue line appear as a speck where it is not otherwise completely overlaid by the gold Reuters line. As such, Figures 2 and 3 depict correlated prices to near perfection.

Figure 2: Reuters and Retail (FOREX.com) EUR/USD prices on February 22, 2012

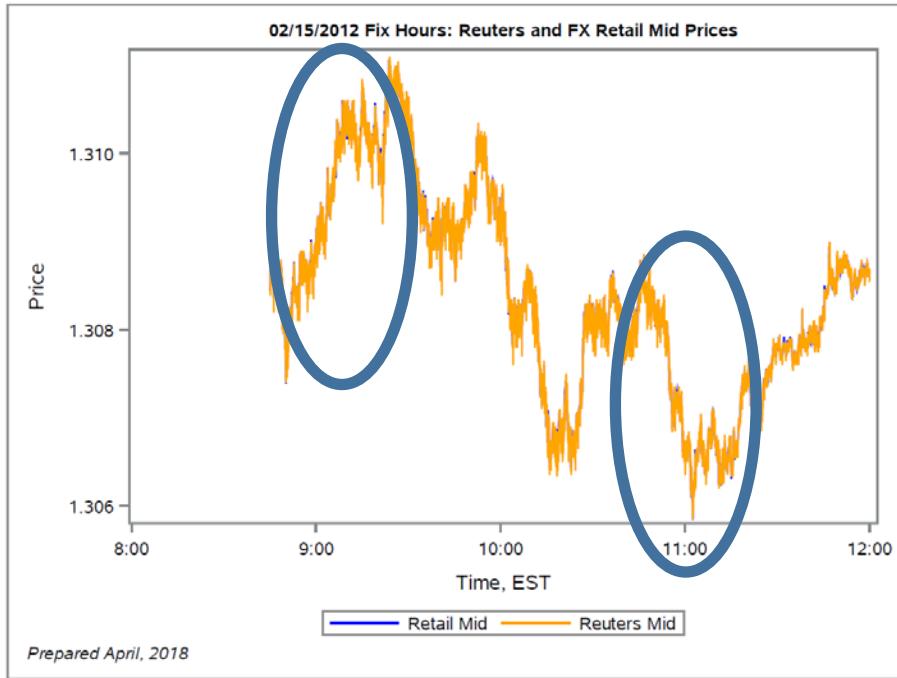


174. The blue oval on the right in Figure 2 demonstrates the price movements around the time of the WM/Reuters Fix, and the blue oval to the left of that shows the price movements around the time of the ECB Fix. The graph shows that, based the statistical analysis performed

by Plaintiffs' expert, the retail FX prices charged by RFEDs to the Plaintiffs move in near-perfect correlation with anticompetitive prices charged by the Defendant liquidity providers to the RFEDs, even around the times of the Fixes when prices are more volatile. Therefore, any increase in the benchmark rates due to the Conspiracy would have caused retail FX prices to increase in the same amount.

175. Figure 3 below further demonstrates, based the statistical analysis performed by Plaintiffs' expert, that the retail prices move one-for one with the Reuters prices that were distorted by the Conspiracy during the Class Period. If the Defendants' quotes are distorted upwards, for example, the RFED quotes that are determined based on Defendants' quotes will adjust upwards by the same amount within a small fraction of a second. Figure 3 demonstrates that retail (i.e., RFED) and Reuters (i.e., dealer banks including Defendants) prices move very closely even during volatile Fixes such as the price movements that occurred on, for example, February 15, 2012, around the ECB and WM/Reuters Fixes. Those close links are also apparent in Figure 2 which shows the price movements around the times of the Fixes on February 22, 2012.

Figure 3: Reuters and Retail (FOREX.com) EUR/USD prices around the ECB and WM/Reuters Fixes on February 15, 2012



176. Again, the blue oval on the right in Figure 3 shows the price movements around the time of the WM/Reuters Fix, and the blue oval to the left of that shows the price movements around the time ECB Fix. The graph shows that retail (i.e., RFED) prices move in near-perfect correlation with Reuters prices even when prices are more volatile such that it is almost impossible to distinguish between the two lines depicted in Figure 3 as the gold line (Reuters) overlays the blue line (Retail), to near perfection.

177. A correlation analysis performed by Plaintiffs' expert further demonstrates the links between retail and dealer bank prices. Correlations can range from -1 to +1, and a value of +1 means the two series move perfectly together. A raw (Pearson's) correlation analysis¹⁰ comparing contemporaneous prices in the two settings during active trading hours in February

¹⁰ Correlation coefficients are used in statistical analysis to measure how strong a relationship is between two variables. A Pearson's correlation is a correlation coefficient commonly used in analyses such as that performed by Plaintiffs' expert.

2012 shows that the estimated correlation between retail and Reuters prices is 0.99997. That extremely high correlation coefficient means that the two series move almost perfectly in unison, as one would predict given their mathematical relationship.

178. A regression analysis, performed by Plaintiffs' expert, further demonstrates the close connection between the retail and Reuters prices. Plaintiffs' expert conducted a regression analysis with those same two price series, regressing minute-by-minute proportionate changes in the FOREX.com quotes on proportionate changes in the Reuters quotes. Explanatory power in the regression model is measured as the regression's "R-squared," a statistic that ranges from 0.0 (zero explanatory power or, in this case, no link at all between retail and wholesale prices) to 1.0 (100% explanatory power or, in this case, wholesale price moves are the only thing that drive retail price moves and all residuals are zero). Plaintiffs' expert's regression results show an *R*-squared statistic of 0.80, a figure that is high by any standards and, according to Plaintiffs' expert, particularly high for an analysis of financial-price changes.

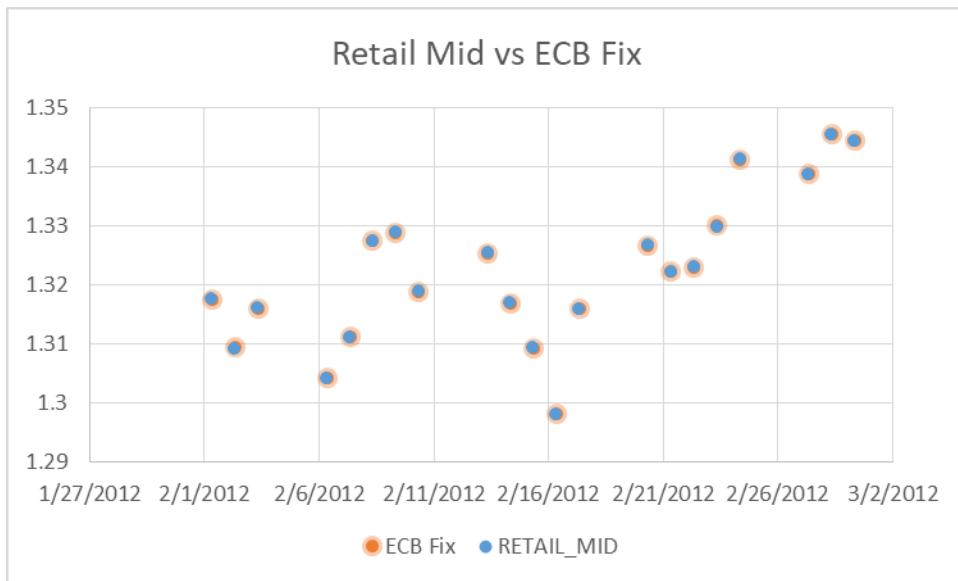
179. The correlation analysis and regression analysis results described above are consistent with the algorithmic pricing mechanism employed by RFEDs in setting retail FX prices passed on to Plaintiffs and members of the proposed Classes. The statistical analyses performed by Plaintiffs' expert demonstrate that the Reuters prices quoted by Defendants and other dealer banks to the RFED Direct Settlement Class Members during the Class Period were nearly perfectly correlated with, and a highly accurate predictor of, the retail prices that the RFEDs passed on to and that were paid by Plaintiffs and members of the proposed Classes. Therefore, to the extent that the Conspiracy manipulated spot prices for FX Instruments, that manipulation would have a direct and proportionate impact on the prices at which Class members purchased those same FX Instruments from RFEDs.

180. As alleged above, the Conspiracy also directly affected benchmark rates including the ECB Fix rates. Those benchmark rates had widespread impact on the pricing of all FX Instruments, including pricing on the FX Instrument sold directly from Defendants to RFEDs.

181. Because the prices charged by RFEDs are determined based on the prices charged by Defendants, and the prices charged by Defendants are influenced by the ECB Fix, RFED pricing should be highly correlated with ECB Fix rates. Using the same methodology used to compare the FOREX.com pricing with Reuters pricing, Plaintiffs' expert performed an economic analysis comparing the daily EUR/USD spot FX Instrument prices from FOREX.com (RFED) at the time of the ECB Fix with the corresponding ECB Fix rates during February 2012. That analysis confirms that the two price series are correlated to near statistical perfection.

182. A visual comparison of FOREX.com's pricing with the ECB rates demonstrates that high degree of correlation. For example, Figure 4 shows both retail prices (FOREX.com) and ECB Fix rates throughout February 2012. The retail (i.e., RFED) FX mid-quote is represented by a blue dot and the ECB rate is represented by a gold dot:

Figure 4: Retail (FOREX.com) and ECB Fix prices, February 2012



The two prices are so nearly perfectly correlated for the entire period that the dots overlap at every observation.

183. Correlation analysis further demonstrates the links between retail prices and the ECB Fix rates. A raw (Pearson's) correlation analysis comparing contemporaneous daily prices from the two series in February 2012 shows that the estimated correlation between retail prices and the ECB rates is 0.99996. That extremely high correlation coefficient means that the two series move almost perfectly in unison, as one would predict given their strong relationship.

184. As alleged above, Defendants manipulated benchmark rates and spot prices for FX Instruments which they charged to RFEDs (i.e. Direct Settlement Class Members), and who, in turn, directly passed on that overcharge to Plaintiffs and the Class members without any intervening individual or entity.

IV. GOVERNMENT INVESTIGATIONS OF DEFENDANTS FOR ILLEGAL CONDUCT IN FX TRADING

185. Governmental law enforcement and regulatory authorities in the United States, United Kingdom, European Union, Brazil, Switzerland, South Africa, and several other sovereigns are conducting ongoing investigations of Defendants' conduct in the FX market.

186. On November 11, 2014, the Commodity Futures Trading Commission brought and settled charges against Citigroup, HSBC, JPMorgan, RBS, and UBS for violations of the Commodity Exchange Act relating to their involvement in the FX manipulation conspiracy. The CFTC settlements required the five Defendants to pay combined fines of over \$1.4 billion, including \$310 million each for Citigroup and JPMorgan, \$290 million each for RBS and UBS, and \$275 million for HSBC. On May 20, 2015, the CFTC brought and settled similar charges against Barclays for violations of the Commodity Exchange Act relating to its involvement in the

FX manipulation conspiracy. The CFTC settlement with Barclays requires the bank to pay \$400 million in fines.

187. On November 12, 2014, the U.S. Office of the Comptroller of the Currency (“OCC”) announced that it assessed fines of \$250 million against Bank of America, \$350 million against Citigroup, and \$350 million against JPMorgan “for unsafe or unsound practices related to their foreign exchange (FX) trading businesses.” In addition to assessing monetary penalties, the OCC issued cease and desist orders requiring the three Defendants to correct deficiencies and enhance oversight of their FX trading activity. The OCC found that between 2008 and 2013, some of the banks’ traders held discussions in online chat rooms for purposes of coordinating FX trading strategies to manipulate exchange rates to benefit traders and the banks.

188. On May 20, 2015, the U.S. Department of Justice (“DOJ”) announced that Defendants Citigroup, JPMorgan, Barclays, and RBS had agreed to plead guilty to felony charges of conspiring to manipulate the prices of U.S. dollars and euros traded in the FX spot market, in violation of the Sherman Antitrust Act, 15 U.S.C. § 1. As part of the plea deals, the four Defendants agreed to pay criminal fines totaling more than \$2.5 billion. The Defendants also agreed to “a three-year period of corporate probation,” and are required to cooperate in the DOJ’s ongoing criminal investigations of other Defendants and co-conspirators. Each of the four Defendants admitted in their plea agreement that “[h]ad this case gone to trial, the United States would have presented evidence sufficient to prove the following facts: . . . The defendant and its co-conspirators carried out the conspiracy to eliminate competition in the purchase and sale of the EUR/USD currency pair by various means and methods including, in certain instances, by: . . . coordinating the trading of the EUR/USD currency pair in connection with European Central Bank and World Markets/Reuters benchmark currency ‘fixes’ which occurred at 2:15 PM (CET)

and 4:00 PM (GMT) each trading day. . . .” The four Defendants also admitted in their plea agreements that the conspiracy began “at least as early as December 2007 and continued until at least January 2013.”

189. Also on May 20, 2015, the DOJ announced that UBS had agreed to plead guilty and pay a \$203 million criminal penalty for illegal FX-related conduct in violation of a Non-Prosecution Agreement that was entered into between UBS and the DOJ Fraud Section on December 18, 2012. The Non-Prosecution Agreement was signed in connection with the DOJ’s previous investigation into UBS’s involvement in a conspiracy to manipulate benchmark interest rates, including the London InterBank Offered Rate (“LIBOR”). The May 20, 2015 plea agreement provides that “UBS expressly agrees that it shall not, through present or future attorneys, officers, directors, employees, agents or any other person authorized to speak for UBS make any public statement, including in litigation . . . contradicting the facts set forth in Exhibit 1.” The facts in Exhibit 1 of the plea agreement include:

- “Certain employees of UBS engaged in conduct after December 18, 2012, . . . namely, (i) fraudulent and deceptive currency trading and sales practices in conducting certain foreign exchange (“FX”) market transactions with customers via telephone, email, and/or electronic chat, to the detriment of UBS’s customers, and (ii) collusion with other participants in certain FX markets.”;
- “UBS’s compliance program . . . did not detect collusive and deceptive sales-related conduct in FX markets until an article was published pointing to potential misconduct in the FX markets.”; and
- “Prior to, and continuing after [December 18, 2012], UBS, through one of its FX traders, conspired with other financial services firms acting as dealers in an FX spot market by agreeing to restrain competition in the purchase and sale of the EUR/USD currency pair in the United States and elsewhere. This was achieved by, among other things: (i) coordinating the trading of the EUR/USD currency pair in connection with ECB and WMR benchmark currency “fixes” which occurred at 12:15 PM (CET) and 4:00 PM (GMT) each trading day, and (ii) refraining from certain trading behavior, by withholding bids and offers, when one conspirator held an open risk position, so that the price of the currency traded would not move in a direction adverse to the conspirator with an open risk

position. UBS participated in this collusive conduct from in or about October 2011 and continued until at least January 2013.”

190. In connection with the DOJ investigation, the U.S. Federal Reserve imposed additional combined fines of over \$1.6 billion on Citigroup, JPMorgan, Barclays, RBS, and UBS.

191. Also on May 20, 2015, the New York State Department of Financial Services (“NYDFS”) announced that Barclays would be required to pay \$485 million and ordered the termination of eight Barclays employees who engaged in New York Banking Law violations in connection with manipulating FX rates. Barclays admitted in the consent order with NYDFS that it had engaged in misconduct regarding the trading of FX “from at least 2008 through 2012.” On November 18, 2015, the NYDFS ordered Barclays to pay an additional \$150 million in fines and terminate another employee for further FX trading violations.

192. In July 2016, HSBC’s global head of FX cash trading, Mark Johnson, was arrested by U.S. authorities at the John F. Kennedy airport in New York on charges of conspiracy and wire fraud. A warrant was also issued for the arrest of Stuart Scott, who was formerly Johnson’s deputy and head of HSBC’s FX cash trading operations for Europe, the Middle East, and Africa, until he left HSBC in 2014. U.S. prosecutors announced in October 2016 that they would institute formal extradition proceedings for Scott, who has remained in England since the warrant was issued. In a criminal complaint filed against Johnson and Scott on July 19, 2016, the DOJ alleges that Johnson and Scott conspired to defraud a client company by “front running” the client’s \$3.5 billion FX spot transaction for GBP/USD executed in December 2011. According to the DOJ complaint, Johnson and Scott misled the client into agreeing to trade the entire \$3.5 billion transaction at the WM/Reuters 3:00 p.m. Fix. When the client agreed, Johnson and Scott discussed on a recorded phone call how high they could “ramp”

up the price of GBP/USD before the client would “squeal,” and then placed “front running” FX orders in anticipation that the client’s order would drive up the price of GBP/USD. Johnson and Scott encouraged other HSBC traders in New York and London to purchase GBP in their individual trader “P-book” accounts, and Scott purchased GBP in his P-book account. When the client authorized the trade, Scott told Johnson, “full amount” (indicating that the client had authorized the full order), to which Johnson replied, “Ohhhh, f***ing Christmas.” The DOJ complaint alleges that HSBC earned approximately \$5 million from its execution of the trade, and an additional \$3 million from trades placed in their traders’ “P-book” accounts. Two years prior to the arrests, HSBC conducted its own investigation into the \$3.5 billion trade, but found no wrongdoing. HSBC is currently reviewing that investigation.

193. In December 2016, the DOJ filed sentencing memoranda indicating that Barclays, JPMorgan, and Citigroup had provided the DOJ with evidence of another antitrust conspiracy in the FX spot market that involves currency pairs other than EUR/USD. That new evidence led the DOJ to broaden its long-running investigation into the manipulation of FX markets to include additional currencies. The DOJ requested that the criminal fines for Barclays, JPMorgan, and Citigroup be reduced due to the three banks’ assistance in the ongoing investigation.

194. On January 10, 2017, the U.S. District Court for the District of Connecticut entered judgments against Citigroup, Barclays, JPMorgan, UBS, and RBS. The criminal fines imposed against each Defendant were \$925 million for Citigroup, \$710 million for Barclays, \$550 million for JPMorgan, \$203 million for UBS, and \$395 million for RBS. All five Defendants were sentenced to probation for three years.

195. On January 4, 2017, former Barclays trader Jason Katz pleaded guilty to federal charges. Katz worked for a year as director of emerging markets-foreign exchange trading at

Barclays beginning in 2010, joined BNP Paribas in September 2011 as director of emerging markets-foreign exchange trading for two years, and then moved to work for Australia & New Zealand Banking Group Ltd. In his guilty plea, Katz admitted to participating in a conspiracy with other bankers to manipulate currency prices on electronic trading platforms by creating bogus trades and coordinating bids with other traders while working at three different financial institutions from 2007 to 2013. As part of the plea deal, Katz has agreed to cooperate with the government's ongoing investigation into Defendants' conspiracy. The conspiracy charge Katz admitted to has a maximum penalty of 10 years in prison and a \$1 million fine, which may be increased to twice the gain derived from the crime or twice the losses suffered by victims if either amount is greater than \$1 million.

196. That same day, the Federal Reserve Board announced that it had permanently banned Katz from the banking industry. The Federal Reserve Board has also issued lifetime bans to Matthew Gardiner, a former FX trader at Barclays and UBS, and Christopher Ashton, the former head of spot trading at Barclays. Ashton was also fined \$1.2 million by the Board. On January 23, 2018, the Federal Reserve Board announced that it had denied a motion to void the \$1.2 million fine and permanent ban against Ashton.

197. On January 10, 2017, a federal grand jury returned indictments for criminal conspiracy against former JPMorgan, Citigroup, and Barclays traders Richard Usher, Rohan Ramchandani, and Chris Ashton for their alleged roles in a conspiracy to manipulate the price of U.S. dollars and euros. The three former traders were members of the chat group that dubbed themselves the "Cartel." The indictment found that Usher and Ramchandani started conspiring in December 2007, while Ashton joined the conspiracy four years later. Usher worked as a currency trader at RBS starting in 2003, then joined JPMorgan in 2010 as their head of FX spot

trading. Ramchandani worked at Citigroup as their head of European spot FX trading. Both Usher and Ramchandani served until as recently as December 2012 as members of the Bank of England's Chief Dealers Sub Group, a committee of currency traders and central bank officials tasked to recommend "industry guidance" for the FX market. Ashton was the global head of spot trading at Barclays. In a 2012 performance review, one of Ashton's managers at Barclays described him as a "superstar" and noted: "Content is a huge part of what we do. Whether that's in chats, on the phone or in person. You have transformed our approach to content and made it a huge advantage to the firm." A fourth member of the "Cartel," Matt Gardiner, a former trader at UBS, Barclays, and Standard Chartered, has been cooperating with the DOJ in their ongoing criminal investigation.

198. On January 12, 2017, former Citigroup trader Christopher Cummins became the second individual to plead guilty to conspiring to fix prices in the FX market. Cummins—a former trader of central and eastern European, Middle Eastern, and African Citigroup—admitted to working with other FX traders at competing firms from 2007 until 2013 to manipulate FX prices on an electronic trading platform "through the creation of non-bona fide trades, coordinat[ing] the placement of bids and offers on that platform[,] and agree[ing] on currency prices they would quote specific customers, among other conduct," according to a press release from the DOJ.

199. On April 20, 2017, the Federal Reserve announced that Deutsche Bank would be required to pay \$156.6 million for failure to detect and address its traders' use of electronic chatrooms to discuss their positions with competitors, and for deficiencies in Deutsche Bank's oversight and internal controls regarding FX traders trading FX in proprietary accounts for the benefit of the bank.

200. On November 12, 2014, the United Kingdom Financial Conduct Authority announced that it had imposed fines totaling £1.1 billion (\$1.8 billion) on Defendants Citigroup (\$358 million), HSBC (\$343 million), JPMorgan (\$352 million), RBS (\$344 million), and UBS (\$371 million) for failing to control business practices in their FX trading operations. The FCA found that between January 1, 2008 and October 15, 2013, “the Banks did not exercise adequate and effective control over their G10 spot FX trading businesses,” and that the Defendants’ traders “shared the information obtained through [groups of traders at multiple Defendant banks]” and “then attempted to manipulate fix rates and trigger client ‘stop loss’ orders (which are designed to limit the losses a client could face if exposed to adverse currency rate movements).” On May 20, 2015, the FCA fined Barclays £284 million (\$441 million) for “improperly sharing confidential client information in attempts to manipulate spot FX currency rates, including in collusion with traders at other firms, in a way that could disadvantage those clients and the market.” The FCA press release announcing the fine stated that between January 1, 2008 and October 15, 2013, “Barclays’ systems and controls over its FX business were inadequate” and “[t]hese failings gave traders in those businesses the opportunity to engage in behaviours that put Barclays’ interests ahead of those of its clients, . . . [which] included inappropriately sharing information about clients’ activities and attempting to manipulate spot FX currency rates, including in collusion with traders at other firms, in a way that could disadvantage those clients and the market.” The Bank of England is supporting the FCA in its ongoing investigation of the FX manipulation conspiracy.

201. On July 21, 2014, the United Kingdom Securities Fraud Office (“SFO”) launched a criminal investigation into allegations of fraudulent conduct in the FX market. On December 19, 2014, the SFO and City of London Police arrested RBS trader Paul Nash in connection with

the investigation. The SFO also sought interviews with several former Defendant traders, including Citigroup's ex-European head of spot trading Rohan Ramchandani; Richard Usher, who moved from RBS to become JPMorgan's chief currency dealer in London; Matt Gardiner, who was at Barclays before joining UBS; and Chris Ashton, the former head of spot trading at Barclays. The SFO closed its investigation in March 2016.

202. The Swiss Financial Market Supervisory Authority ("FINMA") and the Swiss competition commission, "Weko," is currently investigating numerous Defendants, including RBS, Barclays, UBS, Credit Suisse, JPMorgan, and Citigroup. FINMA initiated enforcement proceedings against UBS for suspected market abuse in FX trading in October 2013, and on November 11, 2014, FINMA announced that it was imposing several sanctions on UBS after finding that UBS "severely violated" proper conduct in FX markets. In addition to imposing a fine of 134 million Swiss francs (\$130 million), FINMA required UBS to limit salaries for FX traders and managers, and to automate at least 95 percent of its FX trading in order to limit opportunities for trader manipulation. In December 2015, FINMA announced that it was imposing sanctions on at least six former UBS managers and traders. The announcement noted that "[t]raders shared confidential client information, sometimes revealing the identity of clients to third parties, deliberately triggered stop-loss orders and engaged in front running. They also repeatedly attempted to manipulate foreign exchange benchmarks." The sanctioned former traders were banned for up to five years for their alleged participation in conspiracies to manipulate prices for FX and precious metals. FINMA and Weko are continuing their investigations of UBS and other Defendants.

203. In 2013, the European Commission launched an antitrust investigation into allegations of manipulation of currency rates. The European Commission investigation is

currently ongoing. As recently as June 2016, the European Commission asked banks to gather sales data that could be used to calculate eventual penalties.

204. On February 15, 2017, following a two-year antitrust investigation, the Competition Commission of South Africa filed a complaint against Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, HSBC, JPMorgan, and Standard Chartered; as well as Commerzbank AG, Investec Ltd., Macquarie Bank Limited, Nomura International Plc., Standard Bank of South Africa Ltd., and Standard New York Securities Inc. The Competition Commission alleges that from at least 2007 to 2013, the banks conspired to manipulate U.S. Dollar to South Africa Rand exchange rates, in violation of South African antitrust laws. Specifically, the Competition Commission alleges that the banks colluded on prices for bids, offers, and bid-offer spreads for spot trades on rand-to-dollar exchanges; and that they manipulated rates by coordinating trades and creating fictitious bids and offers. The Competition Commission referred the matter to a tribunal for formal prosecution, and is seeking fines of 10 percent of each bank's gross revenues in South Africa.

205. On February 20, 2017, the Competition Commission of South Africa filed a settlement with Citigroup. Under the terms of the settlement, Citigroup agreed to cooperate with the Commission and provide witnesses to assist the prosecution of the other banks, and to pay an administrative penalty of 69,500,860 Rand (approximately \$5.4 million). The Competition Commission press release announcing the settlement states that "from at least 2007, Citibank N.A. and its competitors had a general agreement to collude on prices for bids, offers and bid-offer spreads for the spot trades in relation to currency trading involving US Dollar / Rand currency pair. Further, the Commission found that Citibank N.A. and its competitors

manipulated the price of bids and offers through agreements to refrain from trading and creating fictitious bids and offers at particular times.”

206. Brazil’s antitrust agency, the Administrative Council for Economic Defense (“CADE”), launched an investigation in 2015 of Bank of America, BTMU, Barclays, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JPMorgan, Morgan Stanley, RBC, RBS, Standard Chartered, and UBS for their roles in the FX manipulation conspiracy. On July 14, 2015, CADE confirmed the names of 30 bankers under investigation, including former RBS and JPMorgan trader Richard Usher; former Barclays and UBS trader Chris Ashton; Ashton’s former colleague and former RBS trader Michael Weston; Ashton’s former Barclays colleague Mark Clark; Citigroup’s former European head of spot trading Rohan Ramchandani; Paul Nash from RBS; former UBS and Standard Chartered trader Matthew Gardiner; Gardiner’s former boss at UBS Niall O’Riordan; and former Standard Chartered trader Eduardo Hargreaves. CADE alleged that the banks colluded to influence benchmark FX rates by aligning positions and pushing transactions in a way that deterred competitors from the market between from at least 2007 to 2013. In December 2016, CADE announced that Barclays, Citigroup, Deutsche Bank, HSBC, and JPMorgan had admitted to participating in a conspiracy to manipulate foreign exchange markets. In agreements approved by a Brazilian tribunal, the banks were required to pay fines of 183.5 million reals (\$54.4 million). CADE also announced that there were “strong indications” that BNP Paribas was also involved in the conspiracy.

207. In March 2016, the South Korean Fair Trade Commission announced that it was imposing fines on HSBC and Deutsche Bank for colluding on bids for FX Instruments.

208. On May 24, 2017, the NYDFS announced that BNP Paribas would be required to pay \$350 million for FX violations that included coordinating with other dealer banks to carry

out fake trades designed to manipulate prices, coordinating with other dealer banks to set fix spreads for customers trading in certain currencies, and improperly sharing customer information.

209. On July 17, 2017, the Federal Reserve Board announced that it was fining BNP Paribas \$246 million for illegal practices in the FX market. The Federal Reserve Board found that BNP Paribas traders used electronic chatrooms to communicate with competitors about their trading positions.

210. On July 24, 2017, the Federal Reserve Board announced that it was banning former Barclays FX trader Michael Weston from the U.S. banking industry for engaging in illegal FX trading practices including using electronic chat rooms to discuss the coordination of trading around FX benchmark fixes and disclosing confidential information of Barclays and its customers to traders at other banks.

211. On September 29, 2017, the Federal Reserve Board fined HSBC \$175 million for unsafe and unsound practices in FX trading.

212. On November 13, 2017, the NYDFS announced that Credit Suisse would be required to pay \$135 million for FX violations that included front-running client orders, improperly sharing customer information, and other illegal conduct that disadvantaged customers from “at least” 2008 to December 2015.

213. On January 18, 2018, the DOJ announced that HSBC had agreed to pay a \$63.1 million criminal penalty as well as \$38.4 million in restitution and disgorgement to resolve charges that it engaged in a scheme to defraud clients through front-running on FX Instruments.

214. On January 25, 2018, the DOJ announced that BNP Paribas had pled guilty to participating in a price-fixing conspiracy in the FX market. As part of the plea deal, BNP

Paribas agreed to pay a criminal fine of \$90 million. On February 16, 2018, the Federal Reserve Board announced that it is seeking to permanently ban Peter Little, the former head of the FX spot desk at Barclays Bank PLC in New York, from the banking industry and to impose a \$487,500 fine on him.

215. Other countries, including Germany, Singapore, Australia, Hong Kong, and New Zealand, have opened investigations of one or more Defendants for their anticompetitive conduct in the FX market.

216. On September 30, 2014, the Financial Stability Board, an international financial oversight body, released a report on FX benchmark rates with recommendations for reform in the FX markets, and especially the WM/Reuters Fix, in order to prevent wrongful manipulation of benchmark rates in the future.

217. As alleged above, a significant number of government investigations into Defendants' FX operations are ongoing, and government agencies continue to bring criminal and administrative actions against Defendants and Defendants' former FX employees. Defendants continue to be able to communicate between firms and disclose the same types of confidential information that Defendants have used throughout the Conspiracy to manipulate FX prices. Therefore, it is clear that the risk of future FX-related misconduct by Defendants has not yet been adequately curtailed.

218. In addition to the numerous ongoing investigations into Defendants' FX operations, government agencies also continue to investigate Defendants for manipulating a variety of other financial instruments.

219. All sixteen Defendants have confirmed in public filings that they have been the subjects of government investigations into the manipulation of FX rates.

V. DIRECT PURCHASER LITIGATION AND SETTLEMENTS

220. On November 1, 2013, plaintiff Haverhill Retirement System filed a class action complaint in this District on behalf of persons and entities that purchased FX Instruments directly from Defendants Barclays, Citigroup, Credit Suisse, Deutsche Bank, JPMorgan, RBS, and UBS, seeking damages for the same FX manipulation conspiracy alleged in this Complaint under the Section 1 of the Sherman Act. *See FOREX* at ECF No. 1.

221. On January 28, 2015, the court denied a motion, made by the eleven Defendant groups named at the time, to dismiss the direct purchaser claims under Rule 12(b)(6). *See FOREX*, 74 F. Supp. 3d 581, 601 (S.D.N.Y. 2015) (ECF No. 242). The January opinion dismissed, however, two separate “Foreign Complaints” that alleged antitrust violations on behalf of persons who traded FX with Defendants in South Korea and Norway. *Id.* at 589, 598.

222. Subsequent plaintiffs (collectively, “Direct Purchaser Class Plaintiffs”) filed complaints with similar allegations against all Defendants named in this action, on behalf of persons and entities that entered into FX Instruments directly with Defendants and directly on U.S. exchanges, seeking damages under the Sherman Act and the Commodity Exchange Act. On February 13, 2016, the *FOREX* complaints were consolidated before this Court. *Id.* at ECF No. 96.

223. On October 22, 2015, the Direct Purchaser Class Plaintiffs in *FOREX* moved for preliminary approval of settlements totaling \$2,009,075,000 with nine of the sixteen Defendant groups named in this action: (1) JPMorgan; (2) UBS; (3) Citigroup; (4) Barclays; (5) Bank of America; (6) Goldman Sachs; (7) RBS; (8) BNP Paribas; and (9) HSBC. *Id.* at ECF Nos. 480-81. The remaining seven Defendants groups named in *FOREX*, all of whom are also named in this Complaint, were not parties to those initial Direct Purchaser Class Settlements: (1) BTMU; (2) Credit Suisse; (3) Deutsche Bank; (4) Morgan Stanley; (5) RBC; (6) SocGen; and (7)

Standard Chartered. *Id.* The motion for preliminary approval also requested that the court certify the Direct and Exchange-Only Settlement Classes for purposes of the Direct Purchaser Class Settlements. *Id.*

224. On December 15, 2015, this Court preliminarily approved the Direct/Exchange-Only Class Settlements, designated a settlement administrator, and preliminarily certified the Direct and Exchange-Only Settlement Classes. *Id.* at ECF No. 536.

225. On August 31, 2016, the Direct Purchaser Class Plaintiffs filed a motion for approval of a plan of notice, allocation, and distribution of the Direct/Exchange-Only Class Settlements. *Id.* at ECF No. 653.

226. On July 28, 2017, the *FOREX* plaintiffs moved for preliminary approval of settlements totaling \$111,200,000 with Morgan Stanley, RBC, SocGen, Standard Chartered, and BTMU. *Id.* at ECF No. 820. The Court granted preliminary approval on September 8, 2017. *Id.* at ECF No. 875. On September 29, 2017, the *FOREX* plaintiffs moved for preliminary approval of a settlement for \$190,000,000 with Deutsche Bank. *Id.* at ECF No. 875. The Court granted preliminary approval that same day. *Id.* at ECF No. 882. The fifteen Defendant groups that have entered into settlements in *FOREX* are referred to herein as “Settling Defendants.”

227. On January 12, 2018, the *FOREX* plaintiffs filed a motion for final approval of the settlements with all fifteen Settling Defendant groups. *Id.* at ECF No. 924. The Court granted final approval on August 6, 2018. *Id.* at ECF No. 1110. The *FOREX* litigation is ongoing against Credit Suisse Group AG; Credit Suisse AG; and Credit Suisse Securities (USA) LLC (collectively, the “Non-Settling Defendants”).

VI. DEFENDANTS TERMINATED AND SUSPENDED TRADERS, FORCED TRADERS TO RESIGN, AND IMPLEMENTED INTERNAL SAFEGUARDS AFTER THE CLASS PERIOD

228. Since allegations of Defendants' illegal manipulation of FX rates first became public, Defendants have terminated and suspended numerous traders and trade supervisors involved in FX operations. Defendants have also put traders on leave and forced traders to resign their positions. These terminations and punitive measures highlight the seriousness of the government investigations into Defendants' FX operations, and of Plaintiffs' allegations herein.

229. In response to government fines and sanctions beginning in 2014, Defendants including Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, JPMorgan, Morgan Stanley, RBS, and UBS have instituted policies banning their traders from participating in multi-bank chat rooms. Those Defendants also fired more than 50 FX traders and trading supervisors.

230. Citigroup announced in February 2014 that its head of FX operations Anil Prasad would be leaving the bank to "pursue other interests." Citigroup also fired its head of European FX spot trading, Rohan Ramchandani. In addition to FX executives, Citigroup also fired and/or suspended several less-senior FX traders. In 2015, one of these fired Citigroup traders, Perry Stimpson, sued Citigroup in London for wrongful discharge. Stimpson argued at trial that he was pressured by senior Citigroup FX employees into using electronic chat rooms to share information with traders at other banks, and stated at trial that his "actions were normal across the industry" and at the bank. Several other former traders from Citigroup and other Defendant banks have brought similar wrongful termination claims against their former employers.

231. In February 2017, former Citigroup trader Baris Ozkaptan prevailed in his unfair dismissal suit against Citigroup in a U.S. employment tribunal. Ozkaptan was fired by Citigroup for sharing the identities of clients in electronic chats, but he alleged in his suit that the bank

turned a “blind eye” to traders sharing confidential client information. Ozkaptan testified in November 2016 that Citigroup traders would routinely disclose client orders to competitors and salespeople would warn preferred customers about trades before they moved markets if it benefited Citigroup.

232. Former Citigroup traders Perry Stimpson, Carly McWilliams, and Robert Hoodless have all received favorable rulings in U.K. courts on at least part of their claims alleging that they were wrongfully dismissed by Citigroup. The judge hearing Stimpson’s claims found that there were “serious inadequacies” in Citigroup’s investigation before Stimpson’s dismissal, and held that “[t]his was a very serious failure to investigate despite having very substantial resources.” In her witness statement at trial, McWilliams stated that sharing information with rivals was part of her “everyday job” at Citigroup. Hoodless alleged that his bosses at Citigroup “made him a scapegoat” for the FX market-manipulation scandal.

233. UBS terminated and suspended a number of traders in connection with the FX conspiracy. In 2013, UBS suspended its global co-head of G10 FX trading in London, Niall O’Riordan. Also in 2013, UBS fired two traders in Singapore, Mukesh Kumar Chhaganlal and Prashan Parmeshwar Sunny Miripuri. Chhaganlal and Miripuri sued UBS in Singapore’s High Court in March 2013 for wrongful dismissal, alleging that the bank fired them to lessen UBS’s perceived role in the alleged manipulation of FX rates. In March 2014, UBS suspended at least six more traders in the U.S., Singapore, and Switzerland. In June 2015, after UBS had paid substantial fines and conducted an independent investigation into its involvement in the FX manipulation conspiracy, UBS reinstated one of the traders that it had previously fired or suspended.

234. Deutsche Bank in January 2014 dismissed three of its New York-based FX traders—Diego Moraiz, who dealt in Latin American currencies; Robert Wallden, a director in Deutsche Bank’s New York FX trading unit; and Christopher Fahy, a managing director at Deutsche Bank’s New York FX office and a former FX trader at Merrill Lynch—following an internal investigation into alleged FX manipulation. Robert Wallden had previously been questioned by the U.S. Federal Bureau of Investigation in 2013, regarding his electronic communications with other FX traders.

235. RBS has terminated and suspended several FX employees. In October 2013, RBS suspended London-based FX spot traders Julian Munson and Paul Nash.

236. In 2015, former RBS trader Ian Drysdale brought an unfair dismissal lawsuit against RBS in London. Drysdale told a London tribunal that RBS “had to find relevant scapegoats, of which I was one,” and issued a statement claiming that “the real reason for my dismissal was to deflect attention from the respondent’s (RBS’s) own admitted failures.” The London judge ruled that RBS’s termination of Drysdale was unfair, but awarded the trader no compensation because “[h]e, along with a number of others, was doing something he knew was fundamentally wrong.”

237. HSBC suspended two of its London-based FX traders on January 17, 2014, amid multiple government investigations into HSBC’s FX operations. One of the suspended traders was Serge Sarramegna, HSBC’s chief trader for major foreign currencies.

238. Barclays suspended at least six FX traders on or about October 31, 2013, including chief global FX dealer Chris Ashton, Tokyo trader Jack Murray, and London trader Mark Clark. The New York Department of Financial Services required Barclays to terminate

eight FX traders as a part of Barclays' penalties for its involvement in the FX rate manipulation conspiracy.

239. JPMorgan placed senior FX trader Richard Usher, the former head of spot G10 currency trading for the bank, on paid leave in October 2013 amid government inquiries into potential manipulation of the FX market. In October 2014, Usher formally left the bank.

240. Goldman Sachs dismissed one of its FX traders, Frank Cahill, in November 2014 for his alleged involvement in FX manipulation. Prior to Goldman Sachs, Cahill worked at HSBC.

241. Bank of America suspended several senior FX traders in 2014.

242. BNP Paribas placed several senior FX traders on leave in 2014, after the bank became a subject of government investigations into the FX manipulation conspiracy. At least one of the suspended traders worked at Citigroup as an FX trader prior to working at BNP Paribas.

243. SocGen has fired at least one currency trader for involvement in the FX conspiracy. In 2015, SocGen dismissed Ilan Botbol for several instances of misconduct regarding FX trading. Later that year, Botbol sued SocGen in French court for unfair dismissal. SocGen responded to the suit by arguing that the termination was justified in part because Botbol shared confidential customer information with a Morgan Stanley trader in 2009 and invited the trader to profit from that information. However, SocGen did not terminate Botbol until six years after that incident took place. Botbol argued that SocGen's claims are undermined by the bank's failure to monitor employee behavior and to act promptly upon learning of the alleged infringements. Botbol also alleged that SocGen encouraged traders to gain market intelligence by sharing information with traders at other banks.

244. In February 2017, Deutsche Bank purchased full-page advertisements in the German newspapers Frankfurter Allgemeine Zeitung and Sueddeutsche Zeitung to publish a letter from CEO John Cryan apologizing to Deutsche Bank customers for the bank’s “serious errors” in the U.S. subprime mortgage crisis as well as unspecified “other cases as well.” The letter states that “some time ago serious errors were made,” “[t]he conduct of our bank did not meet our standards and was unacceptable” in the mortgage case and “other cases as well,” and “[i]n the name of the board of the Deutsche Bank I would now like to take this opportunity to express our deep regret for what has happened.”

245. Defendants have recently implemented surveillance systems to prevent their traders from manipulating the FX market in the future. According to PricewaterhouseCoopers’ 2016 Market Abuse Surveillance Survey, FX dealer banks have recently hired large surveillance teams to review messages and listen in on phone calls between traders, in order to detect and deter illegal collusion by FX traders. The PricewaterhouseCoopers report, published in February 2016, states that FX dealer banks participating in their survey expect to substantially increase their investments in trader surveillance in the next year, with most projecting between \$7 million and \$14 million in additional spending. Some banks employ as many as 50 people to parse through trader emails and messages and listen to trader calls in efforts to detect illegal conduct.

246. Despite these actions, Defendant misconduct in the FX market continues to this day. For example, in February 2018, the Hong Kong Securities and Futures Commission (“SFC”) fined Credit Suisse approximately \$5 million for regulatory violations related to Credit Suisse’s FX trading operations. The SFC found that as far back as April 2003, and as recently as July 2017, Credit Suisse engaged in trading activities that included failing to segregate client funds, failing to report FX transactions, failure to report Credit Suisse’s short positions, selling

risky investment products to clients, and the charging of incorrect rates and commissions to FX clients.

ANTITRUST INJURY TO PLAINTIFFS

247. Defendants are the largest and most dominant FX traders in the global financial system, and particularly in the U.S. FX market. Defendants are horizontal competitors, competing to buy and sell FX by supplying quotes for FX trades. In a competitive FX market, absent collusion, bid-ask spreads on FX Instruments would be extremely narrow, as Defendants would drive down spreads by competing with each other to offer customers more desirable rates. As a result, bid-ask spreads on FX Instruments purchased indirectly from Defendants would be similarly narrow.

248. Defendants' conspiracy harmed competition among dealers in the FX market. As a result of Defendants' collusion, indirect purchasers, including Plaintiffs and members of the proposed Classes, paid higher prices for FX Instruments than they would have in a competitive market.

249. As alleged above, Defendants' manipulation of the Fixes and FX spot rates resulted in anticompetitive prices for all FX Instruments. Defendants' manipulation of the FX market was so pervasive that Plaintiffs and the other members of the proposed Classes could not have participated in the FX market during the Class Period without suffering damage as a result of Defendants' anticompetitive conduct. As a direct and proximate result of Defendants' conspiracy, Plaintiffs and members of the proposed Classes were deprived of the advantageous prices, exchange rates, and bid-ask spreads that would have resulted from normal price competition in the FX market.

250. Defendants' conduct in furtherance of the conspiracy harmed Plaintiffs and the Class members in several ways. Defendants conspired to fix prices and conform their FX trade

quotes. Defendants also agreed to coordinate the timing and volume of trades in order to manipulate the market, to the benefit of Defendants and the ultimate detriment of Plaintiffs and the members of the Proposed Classes. These actions, individually and collectively, had the effect of artificially increasing the prices paid by non-Defendant FX purchasers and decreasing the prices received by non-Defendant FX sellers, thereby overcharging FX customers. Thus, Defendants' actions deprived Plaintiffs and the members of the Proposed Classes of a competitive marketplace and exposed them to artificial pricing and volatility.

251. The injuries suffered by Plaintiffs and members of the proposed Classes are directly traceable to Defendants' anticompetitive conduct alleged herein. On any day that one or more of the Fixes or spot rates were manipulated by Defendants, all members of the Direct Settlement Class (i.e. all entities that purchased FX Instruments directly from Defendants and Defendants' co-conspirators) paid supracompetitive prices for those FX Instruments. Each time a member of the proposed Classes purchased an FX Instrument directly from a member of the Direct Settlement Class (and thus indirectly purchased from one or more Defendants or co-conspirators), the overcharge incurred by the direct purchaser as a result of Defendants' FX manipulation was directly passed on to the member of the proposed Classes. Similarly, for any transaction in which a Defendant sold an FX Instrument to a member of the Direct Settlement Class at an artificially inflated (i.e. price-fixed) price and the Direct Settlement Class member resold that FX Instrument to a Plaintiff or member of the proposed Classes, the Direct Settlement Class member directly passed that anticompetitive overcharge to the Class member.

252. Absent collusion, each individual Defendant would have had an independent incentive to quote tighter bid-ask spreads in order to stay competitive with other dealers in the

FX market. Thus, no single Defendant would have fixed its own bid-ask spread but for a conspiracy among multiple Defendants.

253. Absent collusion, an individual Defendant's attempt to manipulate FX rates would have little to no effect on the FX market. Thus, no single Defendant could have consistently manipulated FX rates but for the conspiracy.

FRAUDULENT CONCEALMENT

254. Throughout the Class Period, Defendants knowingly, fraudulently, and deliberately concealed their conspiracy to fix FX prices from Plaintiffs and members of the proposed Classes.

255. Concealment of the secret communications between Defendants was an essential element of the conspiracy to manipulate FX prices. Defendants communicated through non-public chat rooms, phone calls, instant messages, text messages, email, and at in-person meetings.

256. On June 11, 2013, Bloomberg Business published an article reporting that several Defendants had colluded to manipulate the WM/Reuters Fixes by collectively front-running customer orders. To Plaintiffs' knowledge, this was the first public report concerning Defendants' price manipulation in the FX market. Subsequent news articles and government investigation reports further revealed the involvement of all Defendants and the nature of Defendants' widespread conspiracy.

257. Prior to the Bloomberg article, information regarding Defendants' conspiracy was not reasonably available to Plaintiffs or members of the proposed Classes.

258. Defendants only allowed high-level traders to participate in secret communications regarding the conspiracy. In efforts to avoid detection, these traders used code

words and names, phone calls, encrypted messages, and other communication platforms that are difficult or impossible to trace.

259. In one example of a trader attempting to conceal FX manipulation, a JPMorgan FX trader warned a Barclays trader that they should not discuss their plan to manipulate the USD/South African Rand rate via instant message. In a November 4, 2010 chat transcript that was later uncovered by the New York Department of Financial Services, the Barclays trader stated, “if you win this we should coordinate you can show a real low one and will still mark it little lower haha.” The JPMorgan trader replied that they “prolly shudnt put this on perma chat,” and Barclays trader responded “if this is the chat that puts me over the edge than oh well. much worse out there.”

260. As a result of Defendants’ efforts to conceal their conspiracy, Defendants successfully prevented Plaintiffs from being able to learn of the facts needed to bring suit against Defendants for conspiring to manipulate FX prices until at least June 11, 2013.

261. Because Defendants fraudulently concealed their conspiracy in deliberate efforts to prevent Plaintiffs and members of the proposed Classes from commencing suit, Defendants are equitably estopped from asserting that any otherwise applicable limitations period has run.

CLAIMS FOR RELIEF

FIRST CLAIM FOR RELIEF **Violations of the Donnelly Act,** **New York General Business Laws § 340, *et seq.*** **(On Behalf of the New York Plaintiff against All Defendants)**

262. Plaintiffs incorporate each allegation above as if fully set forth herein.

263. Defendants have entered into an unlawful agreement in restraint of trade in violation of the New York General Business Laws § 340, *et seq.* (the “Donnelly Act”). The New

York Plaintiff, on behalf of the proposed statewide New York Class of indirect FX purchasers, alleges as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants and their co-conspirators entered into and engaged in an agreement, arrangement, or combination, in violation of New York General Business Laws § 340, *et seq.*, by engaging in the acts and practices detailed above. Each Defendant has acted in violation of § 340 to restrain competition and fix, raise, and maintain artificial prices for FX Instruments.

b. Defendants' and their co-conspirators' agreement, arrangement, or combination had the following effects: (i) FX Instrument price competition was restrained, suppressed, and eliminated throughout New York; (ii) FX Instrument prices were raised, fixed, maintained, and stabilized at artificially high levels throughout New York; (iii) the New York Plaintiff and members of the New York Class were deprived of free and open competition; and (iv) the New York Plaintiff and members of the New York Class were overcharged for FX Instruments that they indirectly purchased from Defendants and Defendants' co-conspirators.

c. Throughout the Class Period, Defendants' anticompetitive conduct alleged herein substantially affected intrastate New York commerce. The New York Plaintiff and all members of the proposed New York Class were domiciled in New York during the Class Period and/or purchased FX Instruments in New York indirectly from one or more Defendants during the Class Period. Many Defendants are headquartered in New York City and/or maintain their principal places of business in New York, and Defendants all conduct significant business in New York, including business relating to FX trading. Defendants Merrill Lynch, Pierce, Fenner & Smith Inc.; Barclays Capital Inc.; BNP Paribas North America, Inc.; BNP Paribas Securities

Corp.; BNP Paribas Prime Brokerage, Inc.; Citigroup Inc.; Citibank, N.A.; Citigroup Global Markets Inc.; Credit Suisse Securities (USA) LLC; Deutsche Bank Securities Inc.; The Goldman Sachs Group, Inc.; Goldman, Sachs & Co; HSBC North America Holdings, Inc.; HSBC Bank USA, N.A.; HSBC Securities (USA) Inc.; JPMorgan Chase & Co.; JPMorgan Chase Bank, N.A.; Morgan Stanley; Morgan Stanley & Co., LLC; and RBC Capital Markets LLC all have their principal places of business and/or headquarters in New York, New York. Defendants Bank of America Corporation; The Bank of Tokyo Mitsubishi UFJ Ltd.; Société Générale S.A.; Standard Chartered Bank; UBS Securities LLC; Barclays Bank PLC; Credit Suisse AG; Deutsche Bank AG; and Royal Bank of Scotland PLC all have major New York offices and conduct a substantial portion of their FX trading in New York. All Defendants communicated regularly with Defendant traders in New York for purposes of carrying out the unlawful conspiracy alleged herein.

d. Defendants' agreement, arrangement, or combination caused the New York Plaintiff and the members of the New York Class to incur anticompetitive overcharges on FX Instruments. The New York Plaintiff and the members of the New York Classes thereby suffered injury in fact in the form of lost money or property.

e. By reason of the foregoing, Defendants have entered into agreements in restraint of trade in violation of the Donnelly Act, New York General Business Laws § 340, *et seq.* The conduct set forth above is a *per se* violation of the Act. Accordingly, the New York Plaintiff and members of the New York Class seeks treble damages, costs of suit (up to \$10,000), and reasonable attorneys' fees.

SECOND CLAIM FOR RELIEF
Violations of Arizona's Uniform State Antitrust Act,
Arizona Revised Statutes, §§ 44-1401, *et seq.*
(On Behalf of the Arizona Plaintiff against All Defendants)

264. Plaintiffs incorporate each allegation above as if fully set forth herein.

265. Defendants have entered into an unlawful agreement in restraint of trade in violation of the Arizona Revised Statutes, §§ 44-1401, *et seq.*

266. Defendants have entered into an unlawful contract, combination, or conspiracy in restraint of trade and commerce, in violation of the Arizona Revised Statutes, §§ 44-1401, *et seq.* (the “Uniform State Antitrust Act”). The Arizona Plaintiff, on behalf of the proposed statewide Arizona Class of indirect FX purchasers, alleges as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants and their co-conspirators entered into and engaged in a continuing unlawful conspiracy in restraint of the trade and commerce, as described above, in violation of the Uniform State Antitrust Act. Each Defendant has acted in violation of the Uniform State Antitrust Act to fix, raise, and maintain artificial prices for FX Instruments.

b. Defendants’ unlawful conspiracy consisted of a continuing agreement, understanding, and concerted action among Defendants and their co-conspirators. Defendants entered into and participated in the unlawful trust for purposes of, *inter alia*, (i) creating and carrying out restraints in the FX market; (ii) artificially manipulating the prices of FX Instruments, including FX Instruments sold in Arizona and to Arizona residents; (iii) preventing competition and competitive prices in the FX market; (iv) establishing and settling prices for FX Instruments between Defendants, so as to preclude unrestrained competition among themselves and all purchasers and owners of FX Instruments; and (v) creating and carrying out agreements

to pool and combine Defendants' financial interests connected with their sales and purchases of FX Instruments.

c. The combination and conspiracy alleged herein has had, *inter alia*, the following effects: (i) price competition in the market for the sale of FX Instruments has been restrained and suppressed in the State of Arizona and throughout the United States; (ii) prices for FX Instruments have been fixed, raised, stabilized, and pegged at artificial levels in the State of Arizona and throughout the United States; and (iii) those who purchased FX Instruments directly or indirectly from Defendants and their co-conspirators have been deprived of the benefit of free and open competition.

d. As a direct and proximate result of Defendants' unlawful conduct, the Arizona Plaintiff and members of the Arizona Class have been injured in their business and property in that they incurred overcharges on FX Instruments that they otherwise would not have incurred in the absence of Defendants' unlawful conduct.

e. Defendants' violations of the Uniform State Antitrust Act were flagrant, as defined by Arizona law.

f. As a result of Defendants' violations of the Uniform State Antitrust Act, the Arizona Plaintiff and members of the Arizona Class seek three times the damages sustained and their cost of suit, including reasonable attorney's fees.

THIRD CLAIM FOR RELIEF
Violations of the Cartwright Act,
California Business and Professions Code § 16720, *et seq.*
(On Behalf of the California Plaintiffs against All Defendants)

267. Plaintiffs incorporate each allegation above as if fully set forth herein.
268. Defendants have entered into an unlawful agreement in restraint of trade in violation of the California Business and Professions Code, § 16700, *et seq.* (the "Cartwright

Act"). The California Plaintiffs, on behalf of the proposed statewide California Class of indirect FX purchasers, allege as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants and their co-conspirators entered into and engaged in a continuing unlawful trust in restraint of the trade and commerce, as described above, in violation of California Business and Professions Code § 16720. Each Defendant has acted in violation of § 16720 to fix, raise, and maintain artificial prices for FX Instruments.

b. Defendants' unlawful trust consisted of a continuing agreement, understanding, and concerted action among Defendants and their co-conspirators. Defendants entered into and participated in the unlawful trust for purposes of, *inter alia*, (i) creating and carrying out restraints in the FX market; (ii) artificially manipulating the prices of FX Instruments, including FX Instruments sold in California and to California residents; (iii) preventing competition and competitive prices in the FX market; (iv) establishing and settling prices for FX Instruments between Defendants, so as to preclude unrestrained competition among themselves and all purchasers and owners of FX Instruments; and (v) creating and carrying out agreements to pool and combine Defendants' financial interests connected with their sales and purchases of FX Instruments.

c. The combination and conspiracy alleged herein has had, *inter alia*, the following effects: (i) price competition in the market for the sale of FX Instruments has been restrained and suppressed in the State of California and throughout the United States; (ii) prices for FX Instruments have been fixed, raised, stabilized, and pegged at artificial levels in the State of California and throughout the United States; and (iii) those who purchased FX Instruments

directly or indirectly from Defendants and their co-conspirators have been deprived of the benefit of free and open competition.

d. As a direct and proximate result of Defendants' unlawful conduct, the California Plaintiffs and members of the California Class have been injured in their business and property in that they incurred overcharges on FX Instruments that they otherwise would not have incurred in the absence of Defendants' unlawful conduct.

e. As a result of Defendants' violations of the Cartwright Act, the California Plaintiffs and members of the California Class seek treble damages and their cost of suit, including reasonable attorney's fees, pursuant to § 16750(a) of the California Business and Professions Code.

FOURTH CLAIM FOR RELIEF
Violations of California's Unfair Competition Law,
California Business and Professions Code § 17200, *et seq.*
(On Behalf of the California Plaintiffs against All Defendants)

269. Plaintiffs incorporate each allegation above as if fully set forth herein.

270. Defendants have engaged in unfair competition or unfair, unconscionable, deceptive, or fraudulent acts or practices in violation of California Business and Professions Code § 17200, *et seq.* (California's Unfair Competition Law). The California Plaintiffs, on behalf of the proposed statewide California Classes of indirect FX purchasers, allege as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants committed acts of unfair competition, as defined by § 17200, *et seq.* of the California Business and Professions Code, by engaging in the acts and practices specified above. Each of the Defendants has acted in violation of § 17200 to fix, raise, and maintain artificial prices for FX Instruments.

b. Defendants' conduct as alleged herein violated § 17200, *et seq.* of the California Business and Professions Code. The acts, omissions, misrepresentations, practices, and non-disclosures of Defendants, as alleged herein, constituted a common, continuous, and continuing course of conduct of unfair competition by means of unfair, unlawful, and/or fraudulent business acts or practices within the meaning of § 17200, *et seq.*, including, but not limited to, violations of the Cartwright Act, as set forth above.

c. Defendants' acts, omissions, misrepresentations, practices, and non-disclosures, as described above, whether or not in violation of the Cartwright Act, and whether or not concerted or independent acts, were otherwise unfair, unconscionable, unlawful, or fraudulent.

d. Defendants' acts and practices were unfair to indirect purchasers of FX Instruments in the State of California within the meaning of § 17200 of the California Business and Professions Code.

e. Defendants' acts and practices were fraudulent or deceptive within the meaning of § 17200 of the California Business and Professions Code.

f. The California Plaintiffs and members of the California Class are entitled to full restitution and/or disgorgement of all revenues, earnings, profits, compensation, and benefits that may have been obtained by Defendants as a result of such business acts or practices.

g. The unlawful and unfair business practices of Defendants caused the California Plaintiffs and the members of the California Class to incur overcharges on FX Instruments. The California Plaintiffs and the members of the California Class suffered injury in fact in the form of lost money or property as a result of such unfair competition.

h. As alleged in this Complaint, Defendants and their co-conspirators have been unjustly enriched as a result of their wrongful conduct and by Defendants' unfair competition. The California Plaintiffs and the members of the California Class are accordingly entitled to equitable relief, including restitution and/or disgorgement of all revenues, earnings, profits, compensation, and benefits that may have been obtained by Defendants as a result of such business practices, pursuant to the California Business and Professions Code, §§ 17203 and 17204.

FIFTH CLAIM FOR RELIEF
Violations of the Florida Deceptive and Unfair Trade Practices Act,
Fla. Stat. § 501.201, *et seq.*
(On Behalf of the Florida Plaintiffs against All Defendants Other Than Bank of America, N.A., HSBC Bank USA, N.A. and JPMorgan Chase Bank, N.A.)

271. Plaintiffs incorporate each allegation above as if fully set forth herein.

272. Defendants have engaged in unfair methods of competition, unconscionable acts or practices, and unfair or deceptive acts or practices in the conduct of trade or commerce, in violation of Fla. Stat. § 501.201, *et seq.* (the "Florida Deceptive and Unfair Trade Practices Act"). The Florida Plaintiffs, on behalf of the proposed statewide Florida Class of indirect FX purchasers, allege as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants and their co-conspirators entered into and engaged in unfair methods of competition, unconscionable acts or practices, and unfair or deceptive acts or practices in the conduct of trade or commerce, in violation of the Florida Deceptive and Unfair Trade Practices Act. Each Defendant has acted in violation of the Florida Deceptive and Unfair Trade Practices Act by entering into and engaging in a conspiracy to restrain competition and unfairly and deceptively fix and inflate prices for FX Instruments.

b. Defendants' unlawful combination or conspiracy consisted of a continuing agreement, understanding, and concerted action among Defendants and their co-conspirators. Defendants entered into and participated in the unlawful conspiracy for purposes of engaging in unfair methods of competition and unfair trade practices to fix, control, and maintain the prices charged for FX Instruments throughout the United States, including in the State of Florida.

c. The combination and conspiracy alleged herein has had, *inter alia*, the following effects: (i) price competition in the market for the sale of FX Instruments was restrained and decreased in Florida and throughout the United States; (ii) prices for FX Instruments were fixed, controlled, and maintained at artificial levels in the State of Florida and throughout the United States; (iii) those who purchased FX Instruments directly or indirectly from Defendants and their co-conspirators were deprived of the benefits of free and open competition; and (iv) Florida Plaintiffs and the Florida Class paid supracompetitive, artificially inflated prices for FX Instruments.

d. Throughout the Class Period, Defendants' illegal conduct substantially affected Florida commerce and consumers.

e. As a direct and proximate result of Defendants' unlawful conduct, the Florida Plaintiffs and members of the Florida Class have been injured in their business and property in that they incurred overcharges on FX Instruments that they otherwise would not have incurred in the absence of Defendants' unlawful conduct. As a result of Defendants' violations of the Florida Deceptive and Unfair Trade Practices Act, the Florida Plaintiffs and members of the Florida Class seek actual damages plus attorney's fees and court costs, pursuant to Fla. Stat. § 501.211, with respect to all Defendants other than Bank of America, N.A., HSBC Bank USA, N.A. and JPMorgan Chase Bank, N.A.

SIXTH CLAIM FOR RELIEF
Violations of the Illinois Antitrust Act,
740 Ill. Comp. Stat. 10/1, *et seq.*

(On Behalf of the Illinois Plaintiff against All Defendants Other Than Bank of America, N.A., HSBC Bank USA, N.A. and JPMorgan Chase Bank, N.A.)

273. Plaintiffs incorporate each allegation above as if fully set forth herein.

274. Defendants have entered into an unlawful agreement in restraint of trade in violation of 740 Ill. Comp. Stat. 10/1, *et seq.* (the “Illinois Antitrust Act”). The Illinois Plaintiff, on behalf of the proposed statewide Illinois Class of indirect FX purchasers, alleges as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants and their co-conspirators entered into and engaged in a combination or conspiracy, in violation of the Illinois Antitrust Act, by engaging in the acts and practices detailed above. Each Defendant has acted in violation of the Illinois Antitrust Act to restrain competition and fix, control, and maintain prices for FX Instruments and to unreasonably restrain trade and commerce in the market for FX Instruments.

b. Defendants’ unlawful combination or conspiracy consisted of a continuing agreement, understanding, and concerted action among Defendants and their co-conspirators. Defendants entered into and participated in the unlawful trust for purposes of fixing, controlling, and maintaining the prices charged for FX Instruments.

c. The combination and conspiracy alleged herein has had, *inter alia*, the following effects: (i) price competition in the market for the sale of FX Instruments was restrained and decreased in the State of Illinois and throughout the United States; (ii) prices for FX Instruments sold by Defendants and their co-conspirators were fixed, controlled, and maintained at artificial levels in the State of Illinois and throughout the United States; and (iii) those who purchased FX Instruments directly or indirectly from Defendants and their co-

conspirators were deprived of the benefits of unhampered commerce and free and open competition.

d. Defendants' conduct in furtherance of the conspiracy that occurred at Defendant offices outside of the United States had a direct, substantial, and reasonably foreseeable effect on trade and commerce in the State of Illinois and throughout the United States.

e. As a direct and proximate result of Defendants' unlawful conduct, the Illinois Plaintiff and members of the Illinois Class have been injured in their business and property in that they incurred overcharges on FX Instruments that they otherwise would not have incurred in the absence of Defendants' unlawful conduct. As a result of Defendants' violations of the Illinois Antitrust Act, the Illinois Plaintiff and members of the Illinois Class seek treble damages, plus reasonable attorneys' fees and court costs, pursuant to 740 Ill. Comp. Stat. Ann. 10/7, with respect to all Defendants other than Bank of America, N.A., HSBC Bank USA, N.A. and JPMorgan Chase Bank, N.A.

SEVENTH CLAIM FOR RELIEF
Violations of the Massachusetts Consumer Protection Act
Mass. Gen. Laws ch. 93A, §1 *et seq.*
(On Behalf of the Massachusetts Plaintiff against All Defendants)

275. Plaintiffs incorporate each allegation above as if fully set forth herein.

276. Defendants have entered into an unlawful conspiracy in restraint of trade or commerce in violation of Mass. Gen. Laws ch. 93A, §1 *et seq.* ("Chapter 93A"). The Massachusetts Plaintiff, on behalf of the proposed statewide Massachusetts Class of indirect FX purchasers, alleges as follows:

a. Throughout the Class Period, all Defendants were engaged in trade or commerce as defined by Chapter 93A.

b. Defendants' conduct as alleged herein violated Chapter 93A. The acts, omissions, misrepresentations, practices, and non-disclosures of Defendants, as alleged herein, constituted a common, continuous, and continuing course of conduct of unfair methods of competition and unfair or deceptive acts or practices in the conduct of trade or commerce within the meaning of Chapter 93A.

c. Defendants carried out the conspiracy through unfair methods of competition and unfair or deceptive acts or practices. These methods, acts, and practices substantially affected commerce in the Commonwealth of Massachusetts and throughout the United States.

d. Defendants' conspiracy had, *inter alia*, the following effects: (i) price competition in the market for the sale of FX Instruments was restrained and decreased in Massachusetts and throughout the United States; (ii) prices for FX Instruments sold by Defendants and their co-conspirators were fixed, controlled, and maintained at artificial levels in Massachusetts and throughout the United States; and (iii) those who purchased FX Instruments directly or indirectly from Defendants and their co-conspirators were deprived of the benefits of unhampered commerce and free and open competition.

e. As a direct and proximate result of Defendants' unlawful conduct, the Massachusetts Plaintiff and members of the Massachusetts Class have been injured in their business and property in that they incurred overcharges on FX Instruments that they otherwise would not have incurred in the absence of Defendants' unlawful conduct.

f. As a result of Defendants' violations of Chapter 93A, the Massachusetts Plaintiff and members of the Massachusetts Class seek treble damages and their cost of suit, including reasonable attorney's fees, pursuant to Chapter 93A.

g. Each Defendant has been mailed or delivered a demand letter in accordance with Chapter 93A. More than thirty days has passed since such demand letters were mailed or delivered, and each Defendant has failed to make a reasonable settlement offer.

EIGHTH CLAIM FOR RELIEF
Violations of the Minnesota Antitrust Law of 1971,
Minn. Stat. §§ 325D.49 to 325D.66
(On Behalf of the Minnesota Plaintiff against All Defendants)

277. Plaintiffs incorporate each allegation above as if fully set forth herein.

278. Defendants have entered into an unlawful combination or conspiracy in unreasonable restraint of trade in violation of Minn. Stat. §§ 325D.49 to 325D.66 (the “Minnesota Antitrust Law of 1971”). The Minnesota Plaintiff, on behalf of the proposed statewide Minnesota Class of indirect FX purchasers, alleges as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants and their co-conspirators entered into and engaged in a combination or conspiracy, in violation of the Minnesota Antitrust Law of 1971, by engaging in the acts and practices detailed above. Each Defendant has acted in violation of the Minnesota Antitrust Law of 1971 to restrain competition and fix, control, and maintain the market prices for FX Instruments; to affect, fix, control, maintain, or limit the sale or supply of FX Instruments with the effect of affecting, fixing, controlling, or maintaining the market price for FX Instruments; and to unreasonably restrain trade and commerce in the market for FX Instruments.

b. Defendants’ unlawful combination or conspiracy consisted of a continuing agreement, understanding, and concerted action among Defendants and their co-conspirators. Defendants entered into and participated in the unlawful trust for purposes of fixing, controlling, and maintaining the prices charged for FX Instruments.

c. The combination and conspiracy alleged herein has had, *inter alia*, the following effects: (i) price competition in the market for the sale of FX Instruments was restrained and decreased in the State of Minnesota and throughout the United States; (ii) prices for FX Instruments sold by Defendants and their co-conspirators were affected, fixed, controlled, and maintained at artificial levels in the State of Minnesota and throughout the United States; (iii) price quotations of bids on FX Instruments were fixed and controlled by Defendants; and (iv) those who purchased FX Instruments directly or indirectly from Defendants and their co-conspirators were deprived of the benefits of free and open competition.

d. As a direct and proximate result of Defendants' unlawful conduct, the Minnesota Plaintiff and members of the Minnesota Class have been injured in their business and property in that they incurred overcharges on FX Instruments that they otherwise would not have incurred in the absence of Defendants' unlawful conduct. As a result of Defendants' violations of the Minnesota Antitrust Law of 1971, the Minnesota Plaintiff and members of the Minnesota Class seek treble damages and their cost of suit, including reasonable attorneys' fees, pursuant to Minn. Stat. Ann. § 325D.57.

NINTH CLAIM FOR RELIEF
Violations of the North Carolina Unfair Trade Practice Act
N.C. Gen. Stat. § 75-1, *et seq.*
(On Behalf of the North Carolina Plaintiffs against All Defendants)

279. Plaintiffs incorporate each allegation above as if fully set forth herein.

280. Defendants have entered into an unlawful conspiracy in restraint of trade or commerce in violation of N.C. Gen. Stat. § 75-1, *et seq.* (the "North Carolina Unfair Trade Practice Act"). The North Carolina Plaintiffs, on behalf of the proposed statewide North Carolina Class of indirect FX purchasers, allege as follows:

a. Beginning at least as early as December 1, 2007, and continuing throughout the Class Period, Defendants and their co-conspirators entered into and engaged in a combination or conspiracy, in violation of the North Carolina Unfair Trade Practice Act, by engaging in the acts and practices detailed above. Each Defendant knowingly entered the conspiracy and acted in violation of the North Carolina Unfair Trade Practice Act to restrain competition and fix, control, and maintain prices for FX Instruments and to unreasonably restrain trade and commerce in the market for FX Instruments.

b. Defendants' unlawful combination or conspiracy consisted of a continuing agreement, understanding, and concerted action among Defendants and their co-conspirators. Defendants willfully entered into and participated in the unlawful trust for purposes of fixing, controlling, and maintaining the prices charged for FX Instruments.

c. Defendants carried out the conspiracy through unfair methods of competition and unfair or deceptive acts or practices. These methods, acts, and practices substantially affected commerce in the State of North Carolina and throughout the United States.

d. The combination and conspiracy alleged herein has had, *inter alia*, the following effects: (i) price competition in the market for the sale of FX Instruments was restrained and decreased in North Carolina and throughout the United States; (ii) prices for FX Instruments sold by Defendants and their co-conspirators were fixed, controlled, and maintained at artificial levels in North Carolina and throughout the United States; and (iii) those who purchased FX Instruments directly or indirectly from Defendants and their co-conspirators were deprived of the benefits of unhampered commerce and free and open competition.

e. Defendants' conspiracy in restraint of trade violates the principles of North Carolina common law, in further violation of the North Carolina Unfair Trade Practice Act.

f. Defendants' conspiracy was continuous throughout at least the Class Period.

g. As a direct and proximate result of Defendants' unlawful conduct, the North Carolina Plaintiffs and members of the North Carolina Class have been injured in their business and property in that they incurred overcharges on FX Instruments that they otherwise would not have incurred in the absence of Defendants' unlawful conduct.

h. As a result of Defendants' violations of the North Carolina Unfair Trade Practice Act, the North Carolina Plaintiffs and members of the North Carolina Class seek treble damages, plus reasonable attorney's fees and court costs, pursuant to N.C. Gen. Stat. § 75-16.

REQUESTS FOR RELIEF

Plaintiffs respectfully request the following relief:

A. That the Court determine that the claims alleged herein are suitable for class treatment and certify the proposed Classes pursuant to Federal Rule of Civil Procedure 23;

B. That the Court appoint Plaintiffs as the representatives of the Classes;

C. That Plaintiffs' counsel be appointed as counsel for the Classes;

D. That the Court award the New York Plaintiff and the New York Class damages in amounts according to proof against Defendants for Defendants' violations of New York state antitrust law, trebled;

E. That the Court award the Arizona Plaintiff and the Arizona Class damages in an amount according to proof against Defendants for Defendants' violations of Arizona state antitrust law, trebled;

F. That the Court award the California Plaintiffs and the California Class damages in an amount according to proof against Defendants for Defendants' violations of California state consumer protection and antitrust laws, trebled;

G. That the Court award the Florida Plaintiffs and the Florida Class damages in an amount according to proof against Defendants for Defendants' violations of Florida state consumer protection law;

H. That the Court award the Illinois Plaintiff and the Illinois Class damages in an amount according to proof against Defendants for Defendants' violations of Illinois state antitrust law, trebled;

I. That the Court award the Massachusetts Plaintiff and the Massachusetts Class damages in an amount according to proof against Defendants for Defendants' violations of Massachusetts state consumer protection law, trebled;

J. That the Court award the Minnesota Plaintiff and the Minnesota Class damages in an amount according to proof against Defendants for Defendants' violations of Minnesota state antitrust law, trebled;

K. That the Court award the North Carolina Plaintiffs and the North Carolina Class damages in an amount according to proof against Defendants for Defendants' violations of North Carolina state antitrust law, trebled;

L. That Plaintiffs and the Classes be awarded their costs of suit, including reasonable attorneys' fees; and

M. That Plaintiffs and the Classes be awarded pre- and post-judgment interest on all sums awarded, and other relief as the Court deems necessary and justified.

DEMAND FOR JURY TRIAL

Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiffs request a trial by jury of all claims alleged herein so triable.

Dated: November 20, 2018

Respectfully submitted,

/s/ Michael Dell'Angelo

Michael Dell'Angelo

Merrill Davidoff

Michael J. Kane (*pro hac vice* application forthcoming)

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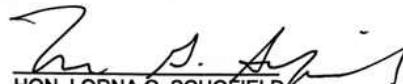
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APPENDIX B

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORKIN RE FOREIGN EXCHANGE
BENCHMARK RATES ANTITRUST
LITIGATIONNew York, New York
No. 13-cv-7789-LGS January 17, 2017This document relates to:
All Actions

SO ORDERED


HON. LORNA G. SCHOFIELD
UNITED STATES DISTRICT JUDGE**STIPULATION AND ~~PROPOSED~~ ORDER ESTABLISHING THE PROTOCOL
FOR THE PRODUCTION OF DOCUMENTS AND ELECTRONICALLY
STORED INFORMATION (“ESI”)**

Pursuant to the agreement reached between Plaintiffs and Defendants herein, this Court adopts and orders the following Protocol relating to the Production of Documents and Electronically Stored Information in these Proceedings, which binds all parties and their counsel of record in this Action, whether they currently are involved or become so in the future (collectively, the “Parties”). The failure of this Protocol to address any particular issue is without prejudice to any position that a Party may take on that issue.

I. DEFINITIONS

- a. “Action” means the above-captioned matter, and any and all cases consolidated or coordinated with it.
- b. “Document” and “Electronically Stored Information” (“ESI”) shall have the same meaning as the usage of these terms in Civil Rule 26.3(c)(2) of the Local District Rules and Federal Rule of Civil Procedure 34(a)(1)(A).

c. “Email” means an electronic means for sending, receiving, and managing communications via different structured data applications (email client software), including, but not limited to, Microsoft Outlook, Google Gmail, Yahoo Mail, or Lotus Notes, and the file created or received by such means, though the inclusion of any platform, program, client, or software as an example herein will not obligate any Party to collect such ESI.

d. “Instant Messages” means communications involving immediate correspondence between two or more users sent via chat client or SMS, including but not limited to, Bloomberg Chat, Google Talk, WhatsApp, Yahoo! Messenger, AOL Instant Messenger, Blackberry Messenger, ICQ, Pidgin, Line, Audium, Trillian, or any proprietary instant messaging system, though the inclusion of any platform, program, client, or software as an example herein will not obligate any Party to preserve or collect such ESI.

e. “Native Format” means and refers to the file structure of a document created by the original creating application (in contrast to a Static Image, which is a representation of ESI produced by converting a native file into a standard image format capable of being viewed and printed on standard computer systems, such as .tiff or .pdf).

f. “Metadata” means (i) information associated with or about a file that is not ordinarily viewable or printable from the application that generated, edited, or modified such native file which describes the characteristics, origins, or usage or validity of the electronic file; and (ii) information generated automatically by the operation of a computer

or other information technology system when a native file is created, modified, transmitted, deleted, saved, or otherwise manipulated by a user of such system.

g. “Load File” means an electronic file containing information identifying a set of paper-scanned images or processed ESI and indicating where individual pages or files belong together as documents, including attachments, and where each document begins and ends. A Load File will also contain data relevant to the individual Documents, including extracted and user-created Metadata, as well as OCR or Extracted Text, should such data be available.

h. “OCR” means optical character recognition technology which is created by software used in conjunction with a scanner that is capable of reading text-based paper/hard copy documents and making such documents searchable using appropriate software.

i. “Extracted Text” means the text extracted from a native document, and includes all header, footer, and document body information, including any hidden content, when available. A “Text File” is a file containing the full multi-page text of native or near-native files extracted directly from the native file, or, in the case of paper/hard copy documents subject to OCR, a file containing the text resulting from the OCR.

j. “Media” means an object or device, including but not limited to, a disc, tape, computer, or other device, on which data is or was stored.

k. “Parties” collectively shall mean all named parties to any action in these Proceedings, including any Party added or joined to any complaint in these Proceedings, as

well as named parties to actions that may be consolidated into or coordinated with the above-captioned Action.

l. "Production" or "Produced" includes any exchange of Documents or Electronically Stored Information between the Parties, whether voluntarily or in response to a formal or informal request.

m. "Search Term" means a combination of words (including synonyms) and phrases designed to capture potentially relevant ESI, and includes strings of words and phrases joined by proximity and Boolean connectors.

n. "Static Image" means or refers to a representation of ESI produced by converting a native file into a standard image format capable of being viewed and printed on standard computer systems. A Tagged Image File Format (TIFF) image is an example of a Static Image.

o. "Structured Data" means ESI stored in a structured format, such as databases or data sets according to specific form and content rules as defined by each field of the database.

p. "Predictive Coding/Technology Assisted Review" shall mean processes for prioritizing or coding a collection of documents using computerized systems, such as machine-learning algorithms, that may rely on the judgments of one or more attorneys experienced in the subject matter of a litigation regarding the responsiveness of a subset of documents and extrapolates those judgments to the remaining document collection. For purposes of this Protocol, Predictive Coding/Technology Assisted Review is synonymous with computer-assisted review, computer-aided review, and content-based advanced

analytics or other terms used to refer to search methodologies that rely on machine-based learning to identify responsive documents.

q. “Unstructured Data” refers to free-form data which either does not have a data structure or has a data structure not easily readable by a computer without the use of a specific program designed to interpret the data, such as word processing documents, slide presentations, Email, and image files.

II. SCOPE

a. **General.** The procedures and protocols outlined herein govern the Production of Documents and ESI by all Parties. The Parties will take reasonable steps to comply with this agreed-upon protocol for the Production of Documents and Electronically Stored Information (“Protocol”). All Productions made pursuant to this Protocol are subject to the Order of Confidentiality entered by the Court on January 25, 2016 (ECF No. 555) (“Confidentiality Order”), and any further protective orders or privilege orders entered in these Proceedings. Nothing in this Protocol is intended to be an exhaustive list of discovery obligations or rights of a Party requested to produce Documents or ESI (“Producing Party”) or a Party requesting Documents or ESI (“Requesting Party”).

The production specifications in this Order apply to Documents that are produced in the first instance in this Action. To the extent any Party is required to or agrees to produce Documents in this Action that originally were collected or produced in other cases or government investigations, such Documents may be produced in the same format in which they originally were produced in the other cases or to the government. The terms and specifications of this Order shall only apply to productions made after the date of entry

of this Order. Productions in this Action that were delivered before the date of entry of this Order are exempt from the terms of the Order, unless the Producing Party and Receiving Party otherwise agree.

To the extent additional obligations or rights not addressed in this Protocol arise under the Federal Rules of Civil Procedure, local rules, or applicable state and federal statutes, they shall be controlling.

b. Limitations and Non-Waiver. The Parties and their attorneys intend by this Protocol to make the mutual disclosures promised herein. The Parties and their attorneys do not intend by this Protocol to waive their rights to any protection or privilege, including the attorney-client privilege and the work-product doctrine. All Parties preserve their attorney-client privileges, work product protection, and other privileges. The Parties and their attorneys are not waiving, and specifically reserve, the right to object to any discovery request on any grounds. Further, nothing in this Protocol shall be construed to affect the admissibility of Documents and ESI. All objections to the discoverability or admissibility of any Documents and ESI are preserved and may be asserted at any time.

c. Reservation of Rights. For the avoidance of doubt, the inclusion of any platform, program, application, or software in Section I as examples does not create any independent obligation or commitment to preserve or collect ESI from such platform, program, application, or software. The Parties reserve all rights to object to any demand to collect or produce ESI from any or all of the examples listed in Section I.

d. Modification by Agreement. Any practice or procedure set forth herein may be varied by agreement of affected Parties, which will be confirmed in writing, where

such variance is deemed appropriate to facilitate the timely and economical exchange of Documents and ESI. Any Party added or joined to any complaint in this Action and any Party to actions that may be consolidated into or coordinated with the above-captioned matter after the date of this Protocol that seeks to deviate from Protocol set forth herein must obtain leave of Court to do so unless all affected Parties otherwise consent in writing. Before seeking Court intervention, Plaintiffs and all affected Defendants shall meet and confer in good faith regarding any modification.

e. **Modification by Court Order.** Nothing in this Protocol waives the right of any Party to petition the Court for an Order modifying its terms upon good cause shown, provided, however, that counsel for such party must first meet and confer with the counsel for the opposing party and the Parties shall use reasonable best efforts to negotiate an exception from or modification to this Agreement and Order prior to seeking relief from the Court.

III. PRESERVATION

The Parties agree that they shall continue to take reasonable steps to preserve relevant Documents and Electronically Stored Information that may exist for a Document or ESI, in accordance with their obligations under applicable law. The Parties will meet and confer regarding the scope of preservation, including custodians, data sources, date ranges, and categories of information that have been or should be preserved in connection with this litigation and disclosures regarding custodians, data sources, date ranges, and categories of information necessary to facilitate the Parties' negotiations. By preserving or

producing information for the purpose of this Action, the Parties are not conceding that such material is discoverable.

IV. PRODUCTION OF STRUCTURED DATA

Where a discovery request requires production of Structured Data, in lieu of producing structured data systems or applications, the Parties shall meet and confer on the content and format of a data extraction from such structured data source. The Parties shall discuss and attempt to agree upon the sets of data or fields to be included in the extraction and the format in which data extracted from the data source shall be produced and the Producing Party shall make all disclosures necessary for the Requesting Party to understand and evaluate whether the content and format of a proposed data extraction would satisfy a production request, such as the data fields available, the meaning of data fields, as well as codes and abbreviations used in the data source and whether a data dictionary exists, the time period over which data exists, any database scheme, or other relevant information. The Producing Party shall generate a sample report of such extracted data for review by the Requesting Party or counsel upon agreement of the Parties as to the fields to be produced and the format of production. The Parties reserve all rights to object, including but not limited to, objections for relevance, undue burden, and/ or inaccessibility.

V. IDENTIFICATION OF RESPONSIVE DOCUMENTS.

The Parties shall meet and confer in good faith to come to an agreement on search methods used to identify responsive Documents and ESI. The Parties will meet and confer regarding the methods to be used to search Documents and ESI for potentially responsive documents or filter out Documents and ESI that are not subject to discovery, and such meet

and confers will include disclosures necessary for the Requesting Party to understand and assess the sufficiency of the proposed search or filtering methodology, such as the nature of and processes of the search technology employed, the custodians and data sources and types to which it will and will not be applied, date ranges that may be used to filter documents, file types subject to or excluded from the methodology, search terms proposed to be used (if any), statistical sampling or validation techniques the Producing Party has used or intends to use to evaluate the sufficiency of the methodology, and whether different search methodologies will be applied to different types or sources of data. During such discussions, the Producing Party shall retain the presumptive right and responsibility to manage and control searches of its data files, including the right to propose revisions to search-term methods or advanced-technology procedures in order to make them more accurate and cost-effective and will disclose those proposed search methods and any revisions. Nothing in this section shall limit a Party's right to reasonably seek agreement from the other Parties or a Court ruling to modify previously agreed-upon search terms or other search parameters at any time prior to the completion of discovery. The Parties will not seek Court intervention without first attempting to resolve any disagreements in good faith, based upon all reasonably available information.

a. **Search Terms:**

1. Where the Parties agree that potentially responsive ESI shall be searched through the use of search terms, the Parties shall meet and confer to provide reasonable assurances to the Requesting Party that the Producing Party's search terms and methodology used to apply them are reasonably calculated to identify

responsive Documents and ESI. Prior to or during such meet and confer, the Producing Party shall make the disclosures identified above.

2. If, after disclosure of the Producing Party's proposed search method, search parameters, and search terms, and prior to the conduct of any searches, and after a reasonable meet and confer process, a Requesting Party believes in good faith that the Producing Party's proposals regarding search, retrieval, and production would result in deficiencies in production, the Requesting Party may make prompt requests for different or additional search methods, parameters, or search terms, but such requests shall only be made after the Parties have met and conferred as to the alleged deficiencies identified by the Requesting Party. If the Parties cannot resolve their disagreements regarding search term methodologies they shall promptly bring the dispute to the Court for resolution.

b. **Technology-Assisted-Review:** No Party shall use predictive coding/technology-assisted review for the purpose of culling the documents to be reviewed or produced without notifying the opposing Party prior to use and with ample time to meet and confer in good faith regarding a mutually agreeable protocol for the use of such technologies, if any. If the Parties cannot resolve their disagreements regarding technology assisted review methodologies, they shall promptly bring the dispute to the Court for resolution.

The fact that a Document or ESI is responsive to a search term or identified as responsive by any other technology used to identify potentially responsive Documents and ESI shall not prevent any Party from withholding such file from production on the

grounds that the file is not responsive or that it is protected from disclosure by applicable privilege or work-product protection.

VI. PRODUCTION OF DOCUMENTS ORIGINATING AS PAPER

The following production specifications apply to Documents that existed in paper format prior to production (“hard copy documents”). Documents that originated as paper but which were scanned and maintained electronically by a Party prior to inception of this Action shall be produced in accordance with Part VII of this Protocol. The Parties agree to produce hard copy documents in the formats described below, to the extent reasonably practicable and not unduly burdensome. These formats are deemed to be productions in reasonably usable form. If a Producing Party intends to produce any hard copy documents in any manner other than as specified herein, the Producing Party shall notify the Requesting Party of its intent, including production format (e.g., produced as paper, made available for inspection). If the proposed production format is not acceptable to the Requesting Party, the Parties shall meet and confer to determine a mutually acceptable production format for such Documents.

a. **TIFFs.** Documents should be produced as single-page, black and white, group IV TIFFs imaged at 300 dpi. Bates numbers, confidentiality designations (in accordance with the protective order governing the case), and redactions (to the extent they are necessary) should be burned into the image. TIFF image files should be provided in an “Images” folder.

b. **Unitizing Documents.** In scanning paper documents, distinct documents should not be merged into a single record, and single documents should not be split into

multiple records (*i.e.*, paper documents should be logically unitized). For example, documents stored in a binder, folder, or similar container (each a “container”) should be produced in the same order as they appear in the container. The front cover of the container should be produced immediately before the first document in the container. The back cover of the container should be produced immediately after the last document in the container. The Parties will undertake reasonable efforts to, or have their vendors, logically unitize documents correctly, and will commit to address situations of improperly unitized documents.

c. **Parent-Child Relationships.** The Parties agree that if any part of a Document or its attachments is responsive, the entire Document and attachments will be produced, except any attachments that must be withheld or redacted on the basis of privilege or work-product protection. The Parties shall take reasonable steps to ensure that parent-child relationships within a document family (the association between an attachment and its parent document) are preserved. The child-document(s) should be consecutively produced immediately after the parent-document. Each document shall be produced with the production number for the first and last page of that document in the “BegBates” and “EndBates” fields of the data load file and with the “BegAttach” and “EndAttach” fields listing the production number for the first and last page in the document family.

d. **OCR.** To the extent that documents that exist in paper or hard copy format have been run through optical character recognition (“OCR”) software, the full text shall be provided on a document-level in an appropriately formatted text file (.txt) that is named

to match the first Bates number of the document. Text files should be provided in a “Text” folder. To the extent that a document is redacted, the text files should not contain the text of the redacted portions.

e. **Unique IDs.** Each TIFF image should have a unique filename, which corresponds to the Bates number of that page. The filename should not contain any blank spaces and should be zero-padded (e.g., ABC-000001), taking into consideration the estimated number of pages to be produced. If a Bates number or set of Bates numbers is skipped in a production, the Producing Party will so note in a cover letter or production log accompanying the production. Bates numbers will be unique across the entire production and prefixes will be consistent across all documents a party produces in the Action.

f. **Data Load Files.** Documents should be provided with an Opticon Cross-Reference File and Concordance data load file using standard Concordance delimiters:

- i. Field Separator: ASCII character 20 (“¶”);
- ii. Quote: ASCII character 254 (“þ”); and
- iii. New Line: ASCII character 174 (“®”).

Concordance-compatible image and data load files should be provided in a “Data” folder.

g. **Metadata.** Each of the Metadata and coding fields set forth in Appendix A shall be produced for that Document.

h. **Color.** Documents containing color need not be produced in color in the first instance, provided however, that the Producing Party shall retain a copy of produced hard copy documents in color. However, if good cause exists for the Requesting Party to request production of certain documents in color, the Requesting Party may request

production of such documents in color by providing (1) a list of the Bates numbers of documents it requests to be produced in color format; and (2) an explanation of the need for production in color format. The Producing Party shall not unreasonably deny such requests.

VII. PRODUCTION FORMAT FOR UNSTRUCTURED ELECTRONICALLY STORED INFORMATION

The Parties agree to produce in the formats described below. These formats are deemed to be productions in reasonably usable form. If any Party contends that particular Documents or ESI warrant a different format, the Parties will meet and confer to determine a mutually acceptable production format for such Documents.

a. **TIFFs.** Documents should be produced as single-page, black and white, group IV TIFFs imaged at 300 dpi. The document's original orientation should be maintained (*i.e.*, portrait-to-portrait and landscape-to-landscape). Bates numbers, confidentiality designations (in accordance with the protective order governing the case), and redactions (to the extent they are necessary) should be burned into the image. TIFF image files should be provided in an “Images” folder.

b. **Extracted Text Files.** The full text of native files should be extracted directly from the native file (not OCR) and should be delivered in an appropriately formatted text file (.txt) that is named to match the first Bates number of the document. Text files should be provided in a “Text” folder. To the extent that a document is redacted, the document should undergo OCR after the text has been redacted in order to remove the redacted text.

c. **Chat Data.** For ESI that is chat data, ESI should be provided in the original Native Bloomberg TXT Format typically packaged within a .tgz container file, or, if the chat data that existed at the time this Action was filed was not maintained in that format at

the time of filing, or was previously produced in connection with a Regulatory Production and the chat data was not preserved in Native Bloomberg TXT format, the Parties shall produce chat data with the following metadata fields to the extent they exist:

1. RoomID /PCHAT Number / INTMSGID;
2. Conversation start;
3. Conversation end time;
4. Duration of chat;
5. Participant Count / Number of Participants.

Further, the directory structure for chat data must contain the following:

1. + arbitraryparentname;
2. + TXT;
3. + mmddyy-mmddyy1;
4. + prefix.IB.mmddyy-mmddyy.txt2;
5. + prefix.IB.mmddyy-mmddyy.txt.att.tar.gz.

d. **Unique IDs.** Each image should have a unique filename, which corresponds to the Bates number of that page. The filename should not contain any blank spaces and should be zero-padded (*e.g.*, ABC-000001), taking into consideration the estimated number of pages to be produced. If a Bates number or set of Bates numbers is skipped in a production, the Producing Party will so note in a cover letter or production log accompanying the production. Bates numbers will be unique across the entire production and prefixes will be consistent across all documents a party produces in this Action.

e. **Parent-Child Relationships.** The Parties agree that if any part of an Email or its attachments is responsive, the entire Email and attachments will be produced, except any attachments that must be withheld or redacted on the basis of privilege or work-product protection. The relationship between attachments, enclosures, embedded files, and/or exhibits to any parent document shall be preserved. The child-document should be consecutively produced immediately after the parent-document. Each document shall be produced with the production number for the first and last page of that document in the “BegBates” and “EndBates” fields of the data load file and with the “BegAttach” and “EndAttach” fields listing the production number for the first and last page in the document family.

f. **Metadata.** The Parties agree that Metadata will be produced for all ESI, whether produced in Native Format or Static Image formats. Appendix A sets forth the minimum metadata fields that must be produced to the extent that metadata exists for a particular document. To the extent that metadata does not exist, is not reasonably accessible or available, or would be unduly burdensome to collect, nothing in this ESI Protocol shall require any Party to extract, capture, collect, or produce such data except for those fields marked for Hard Copy Documents in Appendix A, provided, however, that where such metadata is not produced on such grounds, the Producing Party shall disclose which fields it will not produce. If Metadata is redacted or withheld, the Producing Party will so inform the Requesting Party and record the redaction on any privilege log prepared by the Producing Party; redacted Metadata shall be preserved.

g. **Production of Documents in Native Format.**

1. The processed native for all spreadsheets (*i.e.*, MS Excel, .CSV, or similar), and electronic information containing audio or video components should be produced and linked to the database by the metadata field “NativeLink.”
2. Presentation files will be processed to TIFF format showing comments, hidden slides, speakers’ notes, and similar data. In addition to TIFF images, native files will be provided for presentation files. The native file will be named as the first Bates number of the respective document. The corresponding Load File shall include native file link information for each native file that is produced.
3. The Requesting Party may ask for certain other documents and/or databases initially produced in TIFF format to be produced in their Native Format in the event that the TIFF format is not reasonably usable. The Requesting Party shall identify the documents by their Bates numbers and the documents should be produced in their unaltered Native Format.
4. Where native files are produced in lieu of TIFF images, each native file will be assigned a unique Bates number. The Producing Party will produce a placeholder (a single-page TIFF slip sheet indicating that the native item was produced) along with the file itself in Native Format. The placeholder will be branded with the production number in the lower right hand corner and the phrase “PRODUCED IN NATIVE ONLY” branded in

the center of the page. The Producing Party will also brand any confidentiality or similar endorsements in the lower left hand corner of the placeholder.

5. To the extent that a native spreadsheet must be redacted, the Producing Party may redact either the native file or produce TIFF images with burned in redactions in lieu of a Native File and TIFF placeholder image. If redacting TIFF images and to the extent that any of the following can be automated, the Producing Party, or its ediscovery vendor, should make reasonable efforts to: (1) reveal hidden rows, columns, or sheets prior to converting the document to TIFF; (2) clear any filters that may conceal information; (3) adjust column widths so that numbers do not appear as “#####”; (4) ensure that column and row headings print; (5) ensure that the tab name appears in the header or footer of the document; (6) process comments so that they are produced at the end of the spreadsheet; and (7) process spreadsheets so that they print across, then down. If good cause exists, the Requesting Party may ask the Producing Party to manually undertake the foregoing for certain documents identified by Bates number by the Requesting Party to the extent the document was originally produced with concealed information. The Producing Party shall not unreasonably deny such a request.

6. **Request for Native Files.** Other than as specifically set forth above, a Producing Party need not produce documents in Native

Format. If good cause exists for the Requesting party to request production of certain documents in Native Format, the Requesting Party may request production in Native Format by providing (1) a list of the Bates numbers of documents it requests to be produced in Native Format; and (2) an explanation of the need for reviewing such documents in Native Format. The Producing Party shall not unreasonably deny such requests. The Producing Party shall produce an overlay to ensure that the “NativeLink” entry in the data load file indicates the relative file path to each Native File in such production, and all Extracted Text and applicable metadata fields.

h. **Track Changes and Comments.** To the extent that a Document or ESI contains tracked changes or comments, the Document or ESI should be imaged showing tracked changes and comments.

i. **Password Protected Files.** The Parties will make reasonable efforts to ensure that all encrypted or password-protected Documents and ESI are successfully processed for review and production. To the extent encrypted or password-protected Documents are successfully processed, the Parties have no duty to identify further the prior encrypted status of such Documents. To the extent security protection for such Documents and ESI cannot be successfully processed despite reasonable efforts, the Producing Party shall notify the Requesting Party about such documents prior to production and the Parties shall meet and confer in good faith regarding reasonable efforts or mechanisms to remove such encryption or password protection with respect to the production of available Metadata.

j. **Embedded Documents.** Embedded files in responsive documents shall be extracted during processing and produced as separate documents. The Bates number of the source file from which the embedded file is extracted shall be provided as metadata associated with the embedded file, as described in Appendix A.

k. **Data Load Files.** Documents should be provided with an Opticon Cross-Reference File and Concordance data load file using standard Concordance delimiters:

1. Text Delimiter AKA “Quote” – “þ”, Hex (FE), Unicode (U+00FE), Decimal (254) 2;
2. Field Separator AKA “Comma” – “”, Hex (14);
3. Unicode (U+0014), Decimal (20);
4. Quote: ASCII character 254 (“þ”); and
5. New Line: ASCII character 174 (“®”).

All rows will contain the same number of delimiters and fields. The multi-value field delimiter must be consistent across all fields. For example, if the CC field contains semi-colons between Email addresses, the Tag field should also contain semi-colons. Concordance-compatible image and data load files should be provided in a “Data” folder. Parties have the option to exchange sample load files. If this exchange occurs, the Requesting Party will have 14 days to respond with Load File change requests. Nothing in this Order will limit the Parties from discussing Load File changes throughout the course of the Action.

1. **Deduplication.** A Producing Party shall globally deduplicate by exact duplicate families provided that (i) only exact (bit-by-bit) duplicates are subject to deduplication; (ii) the Producing Party identifies the additional custodians in an Additional Custodian metadata field; and (iii) an Email that includes content in the BCC or other blind copy fields shall not be treated as a duplicate of an Email that does not include content in the BCC or other blind copy field, even if all remaining content in the email is identical. Any party opting to deduplicate in a different manner from the foregoing procedure shall disclose their deduplication methodology to the Requesting Party prior to deduplication. If the Requesting Party objects to the methodology, it shall timely raise those concerns with the Producing Party. If a party opts not to deduplicate, it shall disclose such fact to the Requesting party prior to production of such non-deduplicated data.

m. **Production of Audio and Video Recordings.** If audio and/or video recordings are responsive, the Parties should meet and confer to determine a mutually agreeable format for producing the audio and/or video recording and/or, to the extent a Producing Party object to producing responsive audio and video recordings on grounds of undue burden, regarding the basis for the claim of undue burden.

n. **Production of Transcripts.** If deposition or other transcripts are responsive, the Parties should meet and confer to determine a mutually agreeable format for producing the transcripts.

o. **Custodian or Originating Source.** The custodian or originating source shall be identified in the Custodian field of the database load files. Documents found in the possession of a natural person (or on a natural person's hardware or storage media) should

be produced in such fashion as to identify the natural person. Documents found in the possession of a department, group, entity, or other common facility (*e.g.*, office, file room, archive, network storage, file share, back-up, hard drive, etc.) should be produced in such a fashion as to identify the department, group, entity, or facility. A Producing Party shall use a uniform description of a particular custodian across productions.

p. **Color.** Except for PowerPoint or other presentation applications, Documents containing color need not be produced in color in the first instance. However, if good cause exists for the Requesting Party to request production of certain documents in color, the Requesting Party may request production of such documents in color by providing (1) a list of the Bates numbers of documents it requests to be produced in color format; and (2) an explanation of the need for production in color format. The Producing Party shall not unreasonably deny such requests.

q. **Foreign Language.** Foreign language text files and Metadata should be delivered with the correct encoding to enable the preservation of the document's original language.

r. **Date Format.**

1. Dates and times must be concatenated into a single field, with a format of MM/dd/YYYY HH:MM:ss (zzz).
2. If a time is not available, such as the estimate date for a coded document, then 12:00 am, or 00:00 should be assigned, *i.e.*, 12/21/1999 00:00.

3. Date delimiters, such as slashes and colons, must be consistent across all fields. In the format of MM/dd/YYYY, there are no spaces and only forward slashes.
4. Date formats must be consistent within any one field.
5. Date formats must be consistent across all fields, *i.e.*, a record with a sent date should have the same format in the last modified date field.

To the extent reasonably practicable, all ESI shall be processed within a uniform time zone: *i.e.*, Greenwich Mean Time “GMT,” Eastern Standard Time “EST.” To the extent a Producing Party cannot process ESI with that time zone, it shall disclose the same and the Parties shall meet and confer regarding a reasonable alternative.

s. **Production Media.** The preferred means of producing documents is via secure FTP or secure file share. However, documents may also be produced via CD, DVD, flash drive, or hard drive. To the extent possible, physical media should be protected before it is produced.

t. **Naming Convention for Production Media.** Whether produced via secure FTP, file share, or physical media, the files produced should be combined into a compressed file such as .zip, .rar, etc. The compressed file should be named so as to indicate Producing Party, the date of the production, and the sequence of the production (*e.g.*, “FX Production 20150508-001”). If the production is made using physical media, the media should be labeled to include (a) text referencing that it was produced in *In re Foreign Exchange Benchmark Rates Antitrust Litigation*; and (b) the Bates number range of the materials contained on the media.

u. **Replacement Productions.** Any replacement production will be transmitted with a cover letter or email to identify the production as a replacement and cross-reference the BegBates and EndBates of the documents being replaced. If the replacement production is being transmitted by physical media, the media shall include the phrase “Replacement Production.”

v. **Encrypted Data.** To the extent a production is encrypted before it is produced, the Producing Party shall contemporaneously transmit the credentials necessary to decrypt the data.

VIII. ASSERTIONS OF PRIVILEGE

a. In the interest of the Parties’ time, and to minimize litigation costs, the Parties agree that categorical logging will be premitted for the following types of documents: (1) documents withheld or redacted for foreign data protection or privacy reasons; and (2) communications with bank examiners operating in their supervisory capacity, or communications discussing the substance of bank supervision issues. Documents subject to logging that do not fall within the categories identified for categorical logging will be logged as usual in accordance with federal and local rules.

b. **Categorical Privilege Logs shall be provided for certain types of documents containing the following information:**

1. a sequential number associated with each Categorical Privilege Log record;
2. the Bates number associated with the document; and
3. the category at issue.

c. For any and all documents withheld in full or in part (redacted) for foreign data protection or privacy reasons, the Producing Party shall include a list of the Categorical Log of Bates numbers identifying the documents withheld in full or in part (redacted).

d. To the extent the Requesting Party wishes to challenge the assertion of privilege or protection as to a particular document or documents identified on a categorical log, the Parties shall meet and confer with regard to identification of additional information regarding such documents to permit the Requesting Party to challenge the assertion.

e. **To the extent documents subject to logging do not fall within the categories identified for categorical logging, Privilege Logs shall be provided containing the following information:**

1. a sequential number associated with each Privilege Log record;
2. the date of the document;
3. the Bates numbers of documents redacted;
4. to the extent reasonably available, the identity of all persons who sent, authored, signed, or otherwise prepared the document, and identification of which of them are attorneys;
5. to the extent reasonably available, the identity of all persons designated as addressees or copyees along with other information about them necessary for the Requesting Party to assess the privilege (e.g., title, department, job function, etc.) and identification of which of them are attorneys;

6. the title or subject of a document to the extent the title does not reveal privileged or work-product protected information;
7. a description of the contents of the document that, without revealing information itself privileged or protected, is sufficient to understand the subject matter of the document and the basis of the claim of privilege or immunity;
8. the type or nature of the privilege asserted (*i.e.*, attorney-client privilege; work product doctrine).

Privilege Log #/ Bates #	Date	Author	From or Sender	Recipient	CC	BCC	Title	Subject	Privilege Log Description	Privilege
I, iii	ii	iv	iv	V	v	v	vi	vi	vii	vii

f. **Logging of Document Families.** Where multiple members of a document “family” (*e.g.*, an email attaching a memorandum or other document, etc.) are withheld or redacted on the grounds of privilege, immunity or any similar claim, these families may be jointly logged as a single entry on the privilege log with an indication in the description field that describes the family relationship, provided, however, that information logged must be sufficient to assess the privilege for each family member. By way of example, for an email with an attached memorandum, the log entry must provide all of the information outlined in §VI.a *above* for both the email and memorandum, distinguishing the to, from, cc, bcc, dates, description, and privilege asserted for each document in the single entry. For document families in which fewer than all of the documents are withheld or redacted as

privileged or protected, the privilege log entry for the withheld document(s) shall identify the Bates number of the produced family member.

g. The following documents presumptively need not be included on a privilege log:

1. communications exclusively between a Party and its outside counsel regarding this Action;
2. work product created by outside counsel, or by an agent of outside counsel other than a Party, regarding this Action and created after commencement of this Action;
3. documents not responsive to the Requesting Party's substantive document requests (as modified by the Producing Party's responses and objections to such requests) need not be logged, notwithstanding that such documents may have been within scope of regulatory productions that are being re-produced here.

IX. INADVERTENT DISCLOSURE OF ATTORNEY-CLIENT PRIVILEGED OR WORK-PRODUCT PROTECTED INFORMATION

a. **Clawback Procedures.** Pursuant to Federal Rule of Evidence 502(d), if, in connection with the Action, information subject to a claim of attorney-client privilege or attorney work-product protection is inadvertently disclosed ("Inadvertently Disclosed Protected Information"), the disclosure of the Inadvertently Disclosed Protected Information is not a waiver or forfeiture of any claim of privilege or work product protection that a Party would otherwise be entitled to assert with respect to the Inadvertently Disclosed Protected Information and its subject matter. Any claim regarding Inadvertently Disclosed Protected Information shall be subject to the terms of the

Stipulation and Order of Confidentiality agreed upon by the Parties, and entered by the Court (ECF No. 555).

b. **Recall During Depositions.** If the recall of Inadvertently Disclosed Protected Information is made orally during the taking of a deposition or shortly before a deposition, defending counsel shall, within five business days of the deposition, submit a Notice of Recall, and the Parties shall follow the process outlined in the Stipulation and Order of Confidentiality. If the Parties agree, or the Court determines, the Inadvertently Disclosed Protected Information is not subject to a valid claim of privilege or work product protection, the Parties may submit to the Court any dispute regarding the appropriate remedy, including whether and to what extent a reopening of the deposition may be necessary.

c. **Limitations and Non-Waiver.**

1. Nothing in this Order limits the right of any Party to petition the Court for an *in camera* review of the Inadvertently Disclosed Protected Information.

2. Nothing in this Order limits the right of any Party to petition the Court for an Order finding that disclosure was not inadvertent or that the holder of the privileged or protected information failed to take reasonable steps to prevent disclosure.

XI. COST ALLOCATION

Pursuant to Federal Rule of Civil Procedure 26, the Parties generally presume that the Producing Party bears all costs of preservation, retrieval, and production of its reasonably accessible ESI and there may be cost-sharing or cost-shifting, upon agreement

of the Producing and Requesting Parties or upon proper motion and Order of the Court, as to ESI that is not reasonably accessible.

XII. THIRD PARTY DOCUMENTS

A Party that issues a non-Party subpoena (“Issuing Party”) shall include a copy of this Protocol with the subpoena and state that the Parties to the Action have requested that third Parties produce Documents in accordance with the specifications set forth herein. The Issuing Party shall timely notify other Parties when it receives non-party productions, and shall, upon request by other Parties (“Requesting Parties” for purposes of this paragraph), provide copies of such productions to Requesting Parties in the format in which they were received from the third-party. In the event that the format of a third-party production does not conform with the specifications set forth herein, the Parties shall meet and confer regarding the format of production to Requesting Parties. Nothing in this Protocol is intended to or should be interpreted as narrowing, expanding, or otherwise affecting the rights of the Parties or third Parties to object to a subpoena.

XIII. AUTHENTICATION

The Parties will meet and confer regarding an authentication stipulation concerning Documents produced in this Action.

APPENDIX A: REQUIRED METADATA FIELDS

Field	Description	Email	Non- Email ESI	Hard Copy
Bates Number Begin	Beginning page Bates number	x	x	x
Bates Number End	Ending page Bates number	x	x	x
Attachment Begin	Beginning page of attachment range	x	x	x
Attachment End	Ending page of attachment range	x	x	x
Attachment Count	Number of attachments to an email	x	x	
AllCustodian	Production custodians or non-human production data sources associated with the produced document	x	x	x
File Name	File name of document		x	
File Extension	File extension of document		x	
Email Outlook Type	Type of Outlook item, e.g. email, calendar item, note, task	x		
Page Count	For documents produced in TIFF form, number of pages in the document. For documents produced in native, page count will be 1 (for placeholder).	x	x	x
Email Subject	Subject of email	x	x	
Author	Document author		x	
From	Email author	x	x	
To	Email recipients	x	x	

Field	Description	Email	Non- Email ESI	Hard Copy
CC	Email copyees	x	x	
BCC	Email blind copyees	x	x	
Importance	Email importance flag	x	x	
Date Sent	Date sent (mm/dd/yyyy hh:mm:ss format)	x	x	
Time Sent	Time sent (mm/dd/yyyy hh:mm:ss format)	x	x	
Date Received	Date received (mm/dd/yyyy hh:mm:ss format)	x	x	
Time Received	Time received (mm/dd/yyyy hh:mm:ss format)	x	x	
Date Created	Date created		x	
DateLastModified	Last modification date (mm/dd/yyyy hh:mm:ss format)		x	
Hash Value (MD5 or SHA-1)	Unique electronic signature of email or electronic file	x	x	
Email Thread Family ID (if email threading is used by Producing Party)	Unique identifier from email threading algorithm to denote emails from a single thread and all attachments	x	x	
Production Volume	Production volume name	x	x	x
Confidentiality	Confidentiality designation pursuant to the Protective Order	x	x	x
Redacted	Descriptor for documents that have been redacted (<yes> or <no>)	x	x	x

DATED: January 13, 2017

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SO ORDERED.

Dated:

January 17, 2017
New York, New York

HON. LORNA G. SCHOFIELD
United States District Judge

APPENDIX C

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

James Contant, et al.,

Plaintiffs,

Case No. 17-cv-3139-LGS

v.

Bank of America Corp., et al.,

Defendants.

STIPULATION AND [REDACTED] ORDER OF CONFIDENTIALITY

IT IS HEREBY STIPULATED AND AGREED, pursuant to Rule 26(c) of the Federal Rules of Civil Procedure, by and among the parties hereto, through their undersigned counsel, that the following provisions of this Stipulation and Order of Confidentiality (the “Stipulation and Order”) govern disclosure and use by the parties of all documents, including but not limited to electronically stored information, testimony, exhibits, interrogatory answers, responses to requests to admit, and any other materials and information produced or provided, in the above-referenced Action (the “Action”).

1. DEFINITIONS.

1.1 Party: Any named party to this Action, including its officers, directors, employees, consultants, retained experts, and outside counsel (and their support staff).

1.2 Discovery Material: All documents, items, or other information, regardless of the medium or manner generated, stored, or maintained (including, without limitation, testimony, transcripts, or tangible things) that are produced or generated in disclosures or responses to discovery requests in this matter.

1.3 “Confidential” Information or Items: Information (regardless of how

generated, stored, or maintained), testimony, or tangible things obtained during discovery in this Action that the Disclosing Party reasonably and in good faith believes contains or would disclose non-public, confidential, personal, proprietary, financial, customer, client or commercially sensitive information, confidential trade secrets or non-public research that requires the protections provided in this Stipulation and Order, including, but not limited to, any information that constitutes confidential information under the Federal Rule of Civil Procedure 26(c) or applicable laws or regulations. “Confidential” Information includes information (including Personal Data as defined in section 1.9) of which applicable law - foreign or domestic - requires the equivalent of “Confidential” treatment as set forth in this Stipulation. “Confidential” Information shall not include information that is public at the time of disclosure or that subsequently becomes public other than by an act or omission of the Receiving Party.

1.4 “Highly Confidential” Information or Items: Except as described herein, “Highly Confidential” Information or Items shall be limited to information or items that the Disclosing Party reasonably and in good faith believes contains (a) material regarding trading and investment strategies, pricing and cost information, customer lists, business strategy, trade secrets and other commercial or financial information, the disclosure of which to another Party or non-party would create a substantial risk of causing the Disclosing Party to suffer significant competitive or commercial disadvantage; or (b) Personal Data, as defined in section 1.9, including, but not limited to, social security numbers; home telephone numbers and addresses; tax returns; medical, personal credit and banking information; and personal financial information. “Highly Confidential” Information shall not include information that is public at the time of disclosure or that subsequently becomes public other than by an act or omission of the Receiving Party or by a person who has no legal right to make the information public. “Highly

Confidential” information also includes information as to which applicable law - foreign or domestic - requires the equivalent of “Highly Confidential” treatment as set forth in this Stipulation. Examples of such laws potentially include but are not limited to: the English law of confidence (created by the courts rather than by statute, and including its equivalents in other common law legal systems); French Bank Secrecy Statute (Article L.511-33 of the French Monetary and Financial Code); the French Personal Data Protection Law (Law no. 78-17 dated 6 January 1978); the Japanese law of customer confidentiality (also created by the courts); Section 47 (and related provisions) of the Banking Act (Cap. 19) of Singapore; and the Swiss Federal Act on Banks and Savings Banks 1934, in each case as amended.

1.5 Interbank Chat Documents: Copies of emails, instant messages, chat room transcripts, transcripts of trader’s phone calls or similar Discovery Materials that constitute or record communications exchanged, transmitted or otherwise shared between or among personnel at different banks. For the avoidance of doubt, but without prejudice to any Party’s right to challenge any designation of materials as “Confidential” or “Highly Confidential,” Discovery Material that was exchanged, transmitted or shared only among the same defendant’s personnel shall not be deemed to have been “exchanged, transmitted or otherwise shared between or among FX trading personnel at different banks” and shall not be deemed to constitute “Interbank Chat Documents.”

1.6 Disclosing Party: A Party or non-party that produces Discovery Material in this Action.

1.7 Receiving Party: A Party that receives Discovery Material from a Disclosing Party in this Action.

1.8 Designating Party: A Party or non-party that designates Discovery

Material as “Confidential” or “Highly Confidential.”

1.9 Personal Data: Any information that a Party believes in good faith to be subject to federal, state or foreign data protection laws or other privacy obligations. Personal Data constitutes materials requiring special protection. Examples of such data protection laws potentially include but are not limited to: The Health Insurance Portability and Accountability Act and the regulations thereunder, 45 CFR Part 160 and Subparts A and E of Part 164 (medical information); laws implementing European Union Data Protection Directive 95/46/EC on Data Protection (including but not limited to the Data Protection Act 1998 (c. 29) (United Kingdom personal information)); French Bank Secrecy Statute (Article L.511-33 of the French Monetary and Financial Code); the French Personal Data Protection Law (Law no. 78-17 dated 6 January 1978); the Japanese Act on the Protection of Personal Information; the Personal Data Protection Act 2012 of Singapore; and the Federal Data Protection Act of 1992 (Swiss personal information). Nothing in this paragraph shall be used to imply that any law permits, or does not permit, the production of certain data, regardless of whether such data is designated as “Personal Data.”

1.10 Protected Material: Any Discovery Material that is designated as “Confidential” or “Highly Confidential.”

1.11 Outside Counsel: Attorneys, paralegals, and other law firm personnel, employees and contractors who are not employees of a Party but who are retained to represent or advise a Party in this Action.

1.12 In-House Counsel: Attorneys, paralegals, other legal department personnel and compliance department personnel who are employees of a Party, to whom disclosure of Discovery Material is reasonably necessary for this Action.

1.13 Counsel (without qualifier): Outside Counsel and In-House Counsel (as well as their support staffs).

1.14 Principal: An owner, officer, or executive of any Party whose identity as an owner, officer, or executive has been disclosed to all other Parties.

1.15 Expert: A person who is not an owner, director, officer, or employee of a Party, who has specialized knowledge or experience in a matter pertinent to this litigation, who has been retained by a Party or its Counsel to serve as an expert witness or as a consultant in the prosecution or defense of this Action, including his or her employees and support personnel. This definition includes, without limitation, professional jury or trial consultants retained in connection with this Action.

1.16 Professional Vendors: Persons or entities that provide litigation support services (e.g., photocopying; videotaping; translating; preparing exhibits or demonstrations; organizing, storing, or retrieving data in any form or medium) and their employees and subcontractors.

2. USE OF DISCOVERY MATERIALS IS LIMITED TO THIS CASE. Subject to the provisions of paragraphs 12 and 14, Discovery Material may be used by the Receiving Party solely for purposes of the prosecution or defense, including any settlement thereof, of this Action, and for no other purpose whatsoever.

3. DESIGNATING MATERIAL. The Disclosing Party may, subject to the provisions of this Stipulation and Order, designate Discovery Material as “CONFIDENTIAL” or “HIGHLY CONFIDENTIAL.” The Disclosing Party shall apply a confidentiality designation only when the party has a reasonable, good faith basis that the information so designated constitutes “CONFIDENTIAL” or “HIGHLY CONFIDENTIAL” material. The protections

conferred by this Stipulation and Order cover not only the protected information itself, but also any information copied or extracted therefrom, as well as copies, excerpts, summaries, or compilations thereof, plus testimony, conversations, or presentations by Parties or Counsel to or in court or in other settings that might disclose Protected Material to persons not authorized to receive such material. Where the designation of "Confidential" or "Highly Confidential" is based on the presence of Personal Data, the Disclosing Party may designate the material as "PERSONAL DATA - CONFIDENTIAL" or "PERSONAL DATA - HIGHLY CONFIDENTIAL," respectively.

3.1 Manner and Timing of Designations: Except as otherwise provided in this Stipulation and Order or as otherwise stipulated or ordered, Discovery Material must be designated for protection under this Stipulation and Order by clearly designating the material before it is disclosed or produced.

3.2 The designation of materials as either "CONFIDENTIAL" or "HIGHLY CONFIDENTIAL" shall be made as follows:

a) For ESI, by either (1) imprinting "CONFIDENTIAL" or "HIGHLY CONFIDENTIAL" on the face of each page of a document so designated; (2) affixing a stamp with "CONFIDENTIAL" or "HIGHLY CONFIDENTIAL" on the medium on which the electronic data is stored when copies are delivered to a Receiving Party; or (3) designating the production as "CONFIDENTIAL" or "HIGHLY CONFIDENTIAL" in the transmittal cover letter.

b) For produced documents, by imprinting the words "CONFIDENTIAL" or "HIGHLY CONFIDENTIAL" on the face of each page of a document so designated or in a similarly conspicuous location for non-document materials.

c) For written discovery responses, by imprinting the words

“CONFIDENTIAL” or “HIGHLY CONFIDENTIAL” next to or above any response to a discovery request or on each page of a response.

d) For depositions, by indicating in the record at the deposition which portions of the transcript and/or responses shall be treated as “CONFIDENTIAL” or “HIGHLY CONFIDENTIAL.” Alternatively, within thirty (30) days after receipt of the transcript or recording of such deposition or other pretrial or trial proceeding, the offering or sponsoring Party may designate such transcript or recording or any portion or portions thereof as “CONFIDENTIAL” or “HIGHLY CONFIDENTIAL” by notifying all Parties, in writing, of the specific pages and lines of the transcript or recording that should be treated as Confidential Discovery Material or Highly Confidential Discovery Material. All transcripts or recordings of depositions shall be treated as “HIGHLY CONFIDENTIAL” for thirty (30) days after receipt of the transcript or recording or until written notice of a designation is received, whichever occurs first.

e) All Discovery Materials produced in this Action that were previously produced in *FOREX* shall be subject to and labeled with the same confidentiality designations applicable in *FOREX*.

f) Any materials filed under seal in *In Re Foreign Exchange Benchmark Rates Antitrust Litigation*, No. 13-cv-07789 (“*FOREX*”) that are produced to Plaintiffs in this Action and that remain under seal as of the date of the production shall be subject to the confidentiality designations affixed thereto. If any sealed portion of any such material does not contain a confidentiality designation it shall be treated as “HIGHLY CONFIDENTIAL” unless and until such material is unsealed or otherwise redesignated by the Disclosing Party.

g) For all other Discovery Materials, by placing or affixing on each page of such material (in such manner as will not interfere with the legibility thereof) a “CONFIDENTIAL” or “HIGHLY CONFIDENTIAL” designation.

h) The same procedures as set forth in this section 3.2 shall apply to the designation of material as “PERSONAL DATA - CONFIDENTIAL” and “PERSONAL DATA - HIGHLY CONFIDENTIAL.”

3.3 Upward Designation of Information or Items Produced by Other Parties or Non-Parties: Subject to the standards of paragraph 3, a Party may upward designate (*i.e.*, change any Discovery Material produced without a designation to a designation of “Confidential” or “Highly Confidential” or designate any Discovery Material produced as “Confidential” to a designation of “Highly Confidential”) any Discovery Material produced by another party or non-party, provided that said Discovery Material contains the upward designating Party’s own trade secrets or other confidential research, development, financial, personal, or commercially sensitive information, or otherwise is entitled to protective treatment under Federal Rule of Civil Procedure 26(c) or other law, foreign or domestic.

3.3.1 Upward designation shall be accomplished by providing written notice to all Parties identifying (by Bates number or other individually identifiable information) the Discovery Material to be re-designated within thirty (30) days of production by the Disclosing Party. Failure to upward designate within thirty (30) days of production, alone, will not prevent a Party from obtaining the agreement of all Parties to upward designate certain Discovery Material or from moving the Court for such relief. Any Party may object to the upward designation of Discovery Material pursuant to the procedures set forth in paragraph 9 regarding challenging designations.

3.3.2 In addition, it is possible that a Party may conclude that certain Personal Data should be given alternative or additional protections beyond those afforded by this Stipulation and Order, in which event the Parties shall meet and confer in good faith in order to try to arrive at a mutually agreeable solution, and if unsuccessful, shall present the issue to the Court for resolution. However, nothing in this paragraph shall prevent any Discovery Material that has already been produced from being shown to a deponent at his or her deposition consistent with the terms of this Stipulation and Order unless a request for alternative or additional protections for that specific Discovery Material has been made in writing at least five (5) business days prior to the date of the deposition. Nothing in this paragraph shall be used to imply that any particular law applies or does not apply, or that any applicable law would or would not permit the production of certain data.

4. DISCLOSURE OF DISCOVERY MATERIAL PROTECTED BY THE ATTORNEY-CLIENT PRIVILEGE, WORK PRODUCT DOCTRINE OR FOREIGN LAW.

4.1 This Stipulation and Order is without prejudice to any Disclosing Party's right to assert that any Discovery Material is subject to any applicable claim of privilege or protection, including, but not limited to, the attorney-client privilege and work product doctrine, and is without prejudice to any other party's right to contest such a claim of privilege or protection.

4.2 Consistent with Federal Rule of Evidence 502(d), if a Party or non-party notifies any other Party that it disclosed Discovery Material that is protected from disclosure under (a) the attorney-client privilege, the work product doctrine, or any other applicable privilege or immunity ("Privileged Material") or (b) foreign data protection or bank secrecy laws ("Foreign Law Protected Material"), the disclosure shall not be deemed a waiver in whole or in

part of the applicable privilege or protection, either as to the specific material or information disclosed or as to any of the material or information relating thereto or on the same or related subject matter.

4.3 If the Disclosing Party believes that Privileged Material or Foreign Law Protected Material was produced, the Disclosing Party shall notify in writing any party to which it produced the material of the claim of privilege or protection and the basis for such claim to the extent required by Federal Rule of Civil Procedure 26 (a “Privileged Material Notice”), or, in the case of Foreign Law Protected Material, to the extent reasonably necessary to set forth the basis of the assertion (including the specific foreign law provisions being relied upon) (a “Foreign Law Protected Material Notice”).

4.3.1. Within five (5) business days of receipt of a Privileged Material Notice, the party to whom the Privileged Material was produced shall provide a certification of Counsel that all such disclosed Discovery Material (and any copies thereof) has been sequestered (as provided below), returned, or destroyed, and shall not use such items for any purpose until further order of the Court. The obligation to destroy Privileged Material does not apply to material stored in a manner that makes it unreasonably difficult to destroy, in particular material that is (i) stored on backup storage media made in accordance with regular data backup procedures for disaster recovery purposes or (ii) located in the email archive system or archived electronic files of departed employees, but such retained material shall be treated in accordance with the Stipulation and Order. Notwithstanding the foregoing, the Receiving Party may sequester a copy of relevant Privileged Material, in a secure medium that is segregated from any general document depositories that Receiving Party has established, for purposes of evaluating the claim of privilege, and of bringing a good faith motion for an order allowing use of such

Privileged Material in this Action as provided in ¶ 4.5 below, which motion (unless the Disclosing and Receiving Party otherwise agree) must be brought, under seal, within 30 days of receipt of the Privileged Material Notice.

4.3.2. Within five (5) business days of receipt of a Foreign Law Protected Material Notice, the party to whom the Foreign Law Protected Material was produced shall (unless the Disclosing Party and Receiving Party otherwise agree) provide a certification of Counsel that all such disclosed Discovery Material (and any copies thereof) have been returned or destroyed. The obligation to destroy Foreign Law Protected Material does not apply to material stored in a manner that makes it unreasonably difficult to destroy, in particular material that is (i) stored on backup storage media made in accordance with regular data backup procedures for disaster recovery purposes or (ii) located in the email archive system or archived electronic files of departed employees, but such retained material shall be treated in accordance with the Stipulation and Order.

4.4 If the Receiving Party determines that it has received Discovery Material that constitutes Privileged Material or Foreign Law Protected Material, the Receiving Party shall destroy or return all copies of such Discovery Material to the Disclosing Party within ten (10) business days of the discovery of such information and shall provide a certification of Counsel that all such disclosed Discovery Material (and any copies thereof) has been returned or destroyed, and shall not use such items for any purpose until further order of the Court. When appropriate, the Disclosing Party will provide a redacted version of such Discovery Material to the Receiving Party within five (5) business days of the discovery of such Discovery Material.

4.5 Should the party to whom the Privileged Material or Foreign Law Protected Material was produced seek to challenge the designation of such material as privileged

or protected, it shall notify the Disclosing Party in writing and not use or disclose the material until the claim is resolved. Following the receipt of any objection, the objecting party and the Disclosing Party shall meet and confer in an effort to resolve any disagreement regarding the Disclosing Party's designation of the material as privileged or protected. If the parties cannot resolve their disagreement, the objecting party shall promptly present the issue to the Court for a determination of the Disclosing Party's claim of privilege or protection. The production of Privileged Material or Foreign Law Protected Material, whether inadvertent or otherwise, shall not itself serve as the basis of the motion. While any such motion is pending, the Discovery Material subject to that motion will be treated as privileged or protected until the Court rules. If the Court determines that such material is privileged or protected, the Receiving Party shall (to the extent it has not already done so, *e.g.* as required under section 4.3.2), return or destroy such disclosed Privileged Material and all copies thereof within (5) five business days of the Court's ruling.

5. INADVERTENT FAILURE TO IDENTIFY MATERIALS AS “CONFIDENTIAL” OR “HIGHLY CONFIDENTIAL”: Any Party who inadvertently fails to identify Discovery Material as “Confidential” or “Highly Confidential” shall have thirty (30) days from the discovery of its oversight to correct its failure. Such failure shall be corrected by providing the Receiving Party written notice of the error and substituted copies of the inadvertently produced Discovery Material. The Receiving Party shall thereafter treat the information as Confidential or Highly Confidential Discovery Material. To the extent such information may have been disclosed to anyone not authorized to receive “Confidential” or “Highly Confidential” Discovery Material under the terms of this Stipulation and Order, the Receiving Party shall make reasonable efforts to retrieve the Discovery Material promptly and to

avoid any further disclosure. Should any Party seek to designate (or “upward designate” under paragraph 3.3) for the first time as “Confidential” or “Highly Confidential” any Discovery Material less than five (5) days before the date of a duly-noticed deposition of a deponent, then, notwithstanding any provision herein to the contrary, such Discovery Material may be shown to that deponent at his or her deposition provided that (a) the deponent is a current employee of the Disclosing Party (or, where relevant, of the “upward designating” party); or (b) the requirements of paragraph 6.1(i) have been satisfied.

6. ACCESS TO AND USE OF PROTECTED MATERIAL

6.1 Disclosure of Confidential Information Documents: Unless otherwise ordered by the Court or permitted in writing by the Disclosing Party, a Receiving Party may disclose any information or item designated as “Confidential” only to the following persons:

- a) The Court and court personnel in this Action and any appellate court in this Action.
- b) The Receiving Party’s Outside Counsel to whom it is reasonably necessary to disclose the information for this Action and their legal, clerical, or support staff, including temporary or contract staff.
- c) The Receiving Party’s In-House Counsel to whom it is reasonably necessary to disclose the information for this Action.
- d) The Parties’ insurers and insurers’ counsel participating in matters relating to this Action and their legal, clerical, or support staff, including temporary or contract staff.
- e) No more than four (4) of the Receiving Party’s Principals who have signed the Acknowledgment, except that, upon identification of that Principal, any Disclosing

Party shall have five (5) days to petition the Court to challenge the Principal's status as a Principal to whom "Confidential" Information may be disclosed. Pending a decision whether "Confidential" information may be disclosed to such a Principal, no "Confidential" Information shall be disclosed to that Principal without the consent of the Disclosing Party.

f) Professional court reporters, their staffs, video operators transcribing deposition or testimony in this Action, and Professional Vendors to whom disclosure is reasonably necessary for this Action.

g) Persons who Counsel have a good faith basis to believe are authors or recipients (including those referenced as "cc" or "bcc" recipients on a document (collectively, "cc's")) of the Confidential Discovery Material or who had access to or the authority to access or obtain such Confidential Discovery Material in the normal or authorized course of business (including but not limited to such Person's supervisor(s) at or after the time the material was created).

h) Any person who is a current employee of the Disclosing Party.

i) Any witness who is called, or who counsel for a Party in good faith believes may be called, to testify at trial or deposition in this Action, provided that (1) the testimony of such person has been duly noticed, or such person has been identified as a person with knowledge in a party's initial disclosures or responses to interrogatories, or has been listed on a party's pre-trial witness list; and (2) such person has either (a) executed the Acknowledgment; or (b) been provided with a copy of this Stipulation and Order, and has been informed of the obligation not to disclose any information from any Protected Material to persons other than those specifically authorized by the Stipulation and Order without express written consent of the party who designated the information as Protected Material or order of the

Court.

j) Any Expert to whom disclosure is reasonably necessary for this Action, provided that the Expert has first executed the Acknowledgment, and further provided that any report created by such Expert that relies on or incorporates Confidential Discovery Material in whole or in part shall be designated as "CONFIDENTIAL" by the party responsible for its creation.

k) Any outside photocopying, data processing, graphic production services, litigation support services, mock jurors, or investigators employed by the Parties or their Counsel to assist in this Action and computer personnel performing duties in relation to a computerized litigation system.

l) Any mediator or arbitrator engaged by the Parties to this Action, provided such person has first executed the Acknowledgment.

m) Any other person or entity who counsel for the Disclosing Party agrees, after conferring in good faith, should have access to Confidential Discovery Material or who, upon motion with good cause shown, or upon application made by a Party (including by application made in the course of a deposition where the ability to show such material to the deponent is at issue), the Court orders may have access.

6.2 Disclosure of "Highly Confidential" Information: Unless otherwise ordered by the Court or permitted in writing by the Disclosing Party, a Receiving Party may disclose information of items designated as "Highly Confidential" only to the following persons, provided however, that persons set out in Sections 6.2(c) to (j) will sign the Acknowledgement prior to disclosure:

a) The Court and court personnel in this Action and any appellate

court in this Action.

b) The Receiving Party's Outside Counsel to whom it is reasonably necessary to disclose the information for this Action and their legal, clerical, or support staff, including temporary or contract staff.

c) The Parties' insurers and insurers' counsel participating in matters relating to this Action and their legal, clerical, or support staff, including temporary or contract staff.

d) Professional court reporters, stenographers, video operators transcribing depositions or testimony in this Action and Professional Vendors to whom disclosure is reasonably necessary for this litigation.

e) Any person who Counsel has a good faith basis to believe authored or previously received the Highly Confidential Discovery Material (including "cc's"), or who had access to such Highly Confidential Discovery Material in the normal course of business in their capacity as a co-worker in the same business unit or as a direct or indirect supervisor of or compliance monitor of an author, recipient or "cc" of such material.

f) During the conduct of their depositions, to anyone who is either (i) a current employee of the Disclosing Party, provided that the requirements of paragraph 6.1(i)(2) have been satisfied or (ii) or a former officer, FX trader or FX salesperson (or one of their assistants) of the Disclosing Party, provided that they were employed by the Disclosing Party when the Highly Confidential material was created and provided that the requirements of paragraph 6.1(i)(2) have been satisfied.

g) Any Expert to whom disclosure is reasonably necessary for this Action, provided that the Expert has first executed the Acknowledgment, and further provided

that any report created by such Expert that relies on or incorporates Highly Confidential Discovery Material in whole or in part shall be designated as “HIGHLY CONFIDENTIAL” by the party responsible for its creation.

h) Any outside photocopying, data processing, graphic production services, litigation support services, mock jurors, or investigators employed by the parties or their counsel to assist in this Action and computer personnel performing duties in relation to a computerized litigation system.

i) Any mediator or arbitrator engaged by the named parties to this Action, provided such person has first executed the Acknowledgment.

j) Any person or entity who counsel for the Disclosing Party agrees, after conferring in good faith, should have access to Highly Confidential Discovery Material or who, upon motion with good cause shown, or upon application made by a Party (including by application made in the course of a deposition where the ability to show such material to the deponent is at issue), the Court orders may have access.

6.3 Disclosure of Interbank Chat Documents: To the extent that any Interbank Chat Documents are designated as “Highly Confidential,” a Receiving Party may, notwithstanding the provisions of paragraph 6.2 above, also disclose Interbank Chat Documents to any witness who is called, or who counsel for a Party in good faith believes may be called, to testify at trial or deposition in this Action, provided that (i) the witness (or the witnesses’ employer as of the date of the creation of the document) is referenced in the Interbank Chat Document, or the witness is a current or former employee of a bank reflected in the Interbank Chat Document to be disclosed and (ii) the requirements of paragraph 6.1(i)(2) have been satisfied. For the avoidance of doubt, the term “a bank reflected in the Interbank Chat

Document" includes any bank that employed a person who received, sent or had access to the Interbank Chat Document.

6.4 Disclosure of Personal Data: To the extent that any Discovery Material is designated "Personal Data - Highly Confidential" or "Personal Data - Confidential," the Receiving Party shall, in addition to whatever obligations are imposed under section 8 below, meet and confer with the Disclosing Party before producing such Discovery Material to a non-signatory to this Stipulation.

7. RESPONSIBILITY FOR COMPLIANCE. The Party's counsel who discloses "Confidential" or "Highly Confidential" Discovery Material shall be responsible for assuring compliance with the terms of this Stipulation and Order with respect to persons to whom such "Confidential" or "Highly Confidential" Discovery Material is disclosed and shall obtain and retain the original Acknowledgements executed by qualified recipients of "Confidential" or "Highly Confidential" Discovery Material (if such execution is required by the terms of this order). If it comes to a Party or non-party's attention that any Discovery Materials that it designated for protection do not qualify for protection at all or do not qualify for the level of protection initially asserted, that Party or non-party must promptly notify all other Parties that it is withdrawing the mistaken designation.

8. PROTECTED MATERIAL SUBPOENAED OR ORDERED PRODUCED IN OTHER LITIGATION.

8.1 If, at any time, any Discovery Materials governed by this Stipulation and Order are subpoenaed by any court, administrative or legislative body, or by any other person or entity purporting to have authority to require the production thereof, the Party to whom the subpoena is directed shall, to the extent permitted by applicable law and the rules and

requirements of any relevant governmental or regulatory authority, promptly, and in no event more than five (5) business days if reasonably practicable, give written notice to the Disclosing Party and must include a copy of the subpoena or request. Nothing in this Stipulation and Order shall be construed to require the Party to whom the subpoena is directed to give such written notice where prohibited by law.

8.2 The Party to whom the subpoena is directed also must immediately inform in writing the party who caused the subpoena to issue that some or all of the material covered by the subpoena is the subject of this Stipulation and Order and deliver a copy of this Stipulation and Order promptly to the party.

8.3 The purpose of imposing these duties is to alert the interested parties to the existence of this Stipulation and Order and to afford the Disclosing Party in this case an opportunity to protect its confidentiality interest in the court from which the subpoena or order is issued. The Disclosing Party shall bear all responsibility for any objections to the production of such Discovery Materials, except that the Party receiving any subpoena shall not voluntarily make any production of another Party's "Confidential" or "Highly Confidential" Discovery Materials until resolution of any objections interposed by the Disclosing Party, unless compelled by court order issued after giving notice to the Disclosing Party. Nothing in this Stipulation and Order shall be construed as authorizing or requiring a Party to disobey any law, court order, or information request or subpoena from any federal, state, or foreign regulatory agency or self-regulatory organization requiring the production of Discovery Materials, or as limiting the authority of the Court.

9. CHALLENGES TO DESIGNATIONS AND ACCESS. Entry of this Stipulation and Order shall be without prejudice to any Party's motion for relief from or the modification of

the provisions hereof or to any other motion relating to the production, exchange, or use of any document or ESI, or other information in the course of this Action. If, at any time, a Party objects to a designation of Discovery Materials as “Confidential” or “Highly Confidential,” or disputes the limitations on access to be accorded such information under this order, that Party shall notify the Disclosing Party, in writing, of its disagreement and specifically identify the information or restriction on access in dispute. Following receipt of such notification, counsel for the Disclosing Party and the Party challenging the designation shall meet and confer in an effort to resolve any disagreement. If, despite their good faith effort, the Parties do not resolve their disagreement within ten (10) days of the Disclosing Party’s receipt of the written notice, the Party contesting the designation or restriction on access may thereafter petition the Court, consistent with the governing local rules and individual practices, on the propriety of the designation. While the challenging Party must initiate the motion before the Court, it is the burden of the Party seeking protection under this order to demonstrate that the “Confidential” or “Highly Confidential” designation is appropriate. Until the Receiving Party applies to the Court for a ruling on the designation and the Court rules on that motion, the Discovery Materials in question will continue to be treated as “Confidential” or “Highly Confidential” under this Stipulation and Order, and a challenge under this paragraph shall not affect a Party’s right of access to “Confidential” or “Highly Confidential” Discovery Material or to disclose information as provided for in this Stipulation and Order. A Party does not waive its right to challenge a “Confidential,” “Highly Confidential,” “Personal Data - Confidential,” or “Personal Data -Highly Confidential” designation by not electing to mount a challenge promptly after the original designation is made.

10. UNAUTHORIZED DISCLOSURE OF PROTECTED MATERIAL. If a Receiving Party learns that, by inadvertence, it has disclosed Protected Material to any person or

in any circumstance not authorized under this Stipulation and Order, the Receiving Party must immediately (a) notify in writing the Designating Party of the unauthorized disclosures; (b) use its best efforts to retrieve all copies of the Protected Material; (c) inform the person or persons to whom unauthorized disclosures were made of all the terms of this Stipulation and Order; and (d) request such person or persons to execute the Acknowledgement that is attached hereto as Exhibit A.

11. SUBMITTING “CONFIDENTIAL” AND “HIGHLY CONFIDENTIAL” INFORMATION WITH THE COURT. If a Party wishes to file a document containing “Confidential” or “Highly Confidential” with the Court, it shall do so in compliance with Hon. Lorna G. Schofield’s Individual Rules of Practice I.C.3.

12. USE AND DISCLOSURE OF INDEPENDENTLY OBTAINED INFORMATION. Nothing herein shall impose any restriction on the use or disclosure by a Party or its agent of its own information, or of publicly available information, or of information lawfully available to that party, or of information that lawfully came into the possession of the Party independent of any disclosure of Discovery Material made in this Action.

13. ADVICE TO CLIENT. Nothing in this Stipulation and Order will bar or otherwise restrict counsel from rendering advice to his or her client with respect to this matter or from generally referring to or relying upon “Confidential” or “Highly Confidential” material in rendering such advice so long as counsel does not specifically disclose the substance of the “Confidential” or “Highly Confidential” material.

14. PRE-TRIAL APPLICATION ONLY. This Stipulation and Order shall apply to pre-trial proceedings in this Action and shall have no application at trial. The Parties agree to confer in good faith on a protective order to govern during trial in this Action. This Stipulation

and Order, however, shall remain in effect until such time as an order to govern trial proceedings is entered.

15. DURATION OF ORDER/RETURN OF “CONFIDENTIAL” AND “HIGHLY CONFIDENTIAL” INFORMATION.

15.1 All provisions of this Stipulation and Order restricting the use of “Confidential” or “Highly Confidential” information shall continue to be binding after the conclusion of this Action unless otherwise agreed or ordered by the Court. Within sixty (60) days of the conclusion of this Action (whether by entry of a final order of dismissal, judgment, settlement, or disposition on appeal, or otherwise, and where the time for any further appeals has expired), all parties in receipt of Confidential or Highly Confidential Discovery Material shall make commercially reasonable efforts to either return such materials and copies thereof to the Disclosing Party or destroy such materials and certify that fact. The Receiving Party is not required to return or destroy Confidential Material that (i) is stored on backup storage media made in accordance with regular data backup procedures for disaster recovery purposes; (ii) is located in the email archive system or archived electronic files of departed employees; or (iii) is subject to legal hold obligations provided however, that these materials continue to be subject to the terms of this Stipulation and Order. Backup storage media will not be restored for purposes of returning or certifying destruction of Confidential or Highly Confidential Discovery Material but such retained information shall continue to be treated in accordance with the Stipulation and Order. Counsel of record shall also be permitted to keep a copy of Confidential or Highly Confidential Discovery Material to the extent that it is incorporated into any pleadings, motions or other work product. In that case, counsel of record shall continue to treat the Confidential or Highly Confidential Discovery Material in accordance with this Stipulation and Order. Upon

request, counsel of record shall certify in writing that they have complied with this paragraph.

16. RESERVATION OF RIGHTS. Nothing contained in this Stipulation and Order or any designation of confidentiality hereunder, or any failure to make such designation, shall be used or characterized by any party as an admission by a Party or a Party opponent. Nothing in this Stipulation and Order shall be deemed an admission that any particular information designated as "Confidential" or "Highly Confidential" is entitled to protection under the Stipulation and Order, Federal Rule of Civil Procedure 26(c), or any other law. Nothing in this Stipulation and Order shall be construed as granting any person or entity a right to receive specific "Confidential" or "Highly Confidential" information where a court has entered an order precluding that person or entity from obtaining access to that information. The Parties specifically reserve the right to challenge the designation of any particular information as "Confidential" or "Highly Confidential" and agree that by stipulating to entry of this Stipulation and Order, no Party waives any right it otherwise would have to object to disclosing or producing any information or item on any ground not addressed in this Stipulation and Order. Similarly, no Party waives any right to object on any ground to introduction or use as evidence of any of the Disclosure or Discovery Material covered by this Stipulation and Order.

17. STANDARD OF CARE. The recipient of any "Confidential" or "Highly Confidential" Discovery Material shall maintain such material in a secure and safe area and shall exercise a standard of due and proper care with respect to the storage, custody, use, and/or dissemination sufficient to safeguard against unauthorized or inadvertent disclosure of such material. "Confidential" or "Highly Confidential" Discovery Material shall not be copied, reproduced, extracted or abstracted, except to the extent that such copying, reproduction, extraction or abstraction is reasonably necessary for the conduct of this Action. All such copies,

reproductions, extractions, and abstractions shall be subject to the terms of this Stipulation and Order and labeled in the same manner as the designated material on which they are based. The recipient of Personal Data shall protect these materials with the same degree of care that they use to protect and safeguard their own like information, but not less than the degree of care required of financial institutions to meet their own obligations as to such data given its sensitivity and value. Such measures shall include, but are not limited to, maintaining the data in encrypted form when not being used, restricting access to the data to persons employed by counsel or experts who are actively assisting counsel and experts in this Action, and ensuring that the data is not copied, reproduced, extracted or abstracted except to the extent that such acts are reasonably necessary for the conduct of this Action. Any such copies, reproductions, extractions or abstractions are Personal Data and are subject to the same restrictions and controls.

18. USE AND DISCLOSURE OF OWN INFORMATION. Nothing in this Stipulation and Order shall be construed to limit any Disclosing Party's use or disclosure of its own documents, materials, or information that have been designated as "Confidential" or "Highly Confidential" pursuant to this Stipulation and Order.

19. EFFECT ON OTHER AGREEMENTS. Nothing in this Stipulation and Order shall be construed to effect, amend, or modify any existing confidentiality agreements between, or protective orders applicable to, any of the Parties hereto.

20. MODIFICATION. This Stipulation and Order may be changed only by agreement of the Parties or by an order of this Court. Except as provided herein, this Stipulation and Order shall not prejudice the right of any Party or non-party to move the Court to broaden or restrict the rights of access to and use of particular Discovery Material, or to seek modification of this Stipulation and Order upon due notice to all other Parties and affected non-patties.

21. THIRD-PARTY DISCOVERY.

21.1 The Parties shall serve a copy of this Stipulation and Order simultaneously with any discovery request made to a non-party in this Action. Any Party shall be entitled to seek and enforce compliance with any non-party subpoena served in this matter by any other Party. Further, in the event a non-party produces information in response to a subpoena or request, any Party receiving such information from the non-party shall ensure that all other Parties receive copies of the non-party's production within ten (10) business days of Party's receipt of such production, or in the case of voluminous material or other exceptional circumstances, the Party receiving such information from the non-party shall notify all other Parties of its receipt of such production within five (5) business days, and shall provide copies of the non-party production to all other Parties as soon as practicable.

21.2 A non-party from whom discovery is sought by one or more Parties to this Action may designate Discovery Material that it produces as "CONFIDENTIAL" or "HIGHLY CONFIDENTIAL" consistent with section 3 and the other terms of this Stipulation and Order. Under such circumstances, Discovery Material designated "CONFIDENTIAL," "HIGHLY CONFIDENTIAL," "PERSONAL DATA - CONFIDENTIAL" or "PERSONAL DATA - HIGHLY CONFIDENTIAL" by a non-party shall be assigned the same protection as Discovery Material so designated by a Disclosing Party, and all duties applicable to a Disclosing Party under this Stipulation and Order shall apply to the non-party.

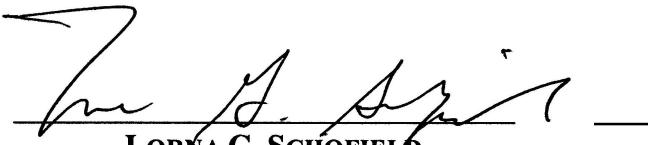
22. NEW PARTIES TO THIS ACTION. In the event that additional persons or entities become parties to this Action, such parties shall not have access to Confidential or Highly Confidential Material produced by or obtained from any Disclosing Party until the newly joined parties or their counsel endorse a copy of the Acknowledgement and file it with the Court.

23. **COURT RETAINS JURISDICTION.** The Court retains jurisdiction even after final disposition of this litigation to enforce this Stipulation and Order by the sanctions set forth in Rule 37 of the Federal Rules of Civil Procedure and any other sanctions as may be available to the presiding judge, including the power to hold parties or other violators of this Stipulation and Order in contempt and to make such amendments, modifications, deletions, and additions to this Stipulation and Order as the Court may from time to time deem appropriate.

24. **EXECUTION.** This Stipulation and Order may be executed in counterparts. This Stipulation and Order shall become effective as a stipulation as among the executing Parties immediately upon its execution by such executing Parties.

Dated: November 29, 2018
New York, New York

SO ORDERED this 30th day of November 2018:



LORNA G. SCHOFIELD
UNITED STATES DISTRICT JUDGE

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

James Contant, et al.,

Plaintiffs,

v.

Bank of America Corp., et al.,

Defendants.

Case No. 17-cv-3139-LGS

**ACKNOWLEDGEMENT AND AGREEMENT TO BE BOUND BY
STIPULATION AND ORDER OF CONFIDENTIALITY**

I, _____, under penalty of perjury, 28 U.S.C. §1746, declare as follows:

1. Information, including documents and things, designated as “CONFIDENTIAL” or “HIGHLY CONFIDENTIAL” as defined in the Stipulation and Order of Confidentiality entered in the above-captioned Action (the “Stipulation and Order”), is being provided to me pursuant to the restrictions of the Stipulation and Order.
2. I have been given a copy of and have read the Stipulation and Order.
3. I am familiar with the terms of the Stipulation and Order, and I agree to comply with and to be bound by its terms.
4. I submit to the jurisdiction of the United States District Court for the Southern District of New York for enforcement of the Stipulation and Order.
5. I acknowledge that violation of the Stipulation and Order may result in penalties for contempt of court.

6. I agree to not use any Confidential or Highly Confidential Discovery Materials disclosed to me pursuant to the Stipulation and Order except for purposes of the above-captioned litigation and not to disclose any of this information to persons other than those specifically authorized by the Stipulation and Order, without the express written consent of the party who designated the information as confidential or by order of the presiding judge.

7. I agree to notify any stenographic, clerical, or technical personnel who are required to assist me of the terms of this Stipulation and Order and of its binding effect on them and me.

Name: _____

Job Title: _____

Employer: _____

Signed at [PLACE], this _____ day of _____, 20____

SO STIPULATED AND AGREED:

November 29, 2018



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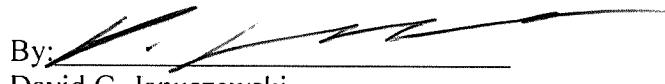
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